THE CALIFORNIA ALMANAC OF EMISSIONS AND AIR QUALITY

— 2007 Edition —

This almanac was prepared and published by the staff of the

Planning and Technical Support Division
California Air Resources Board

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A Note from the Chairman ....

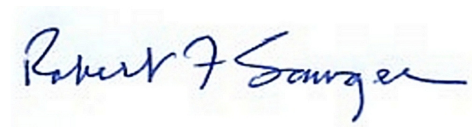
Welcome to the 2007 Edition of the California Air Resources Board's Almanac of Emissions & Air Quality. This document provides an overview of California's air quality and the emissions that contribute to our air pollution problem. California's air quality continues to improve but we face substantial challenges. Attaining air quality standards and addressing air pollution related health risk requires new emission reductions statewide. As the agency responsible for overseeing California's comprehensive air quality programs we take this public health challenge very seriously.

This document is intended as a reference for the general public as well as those involved in air quality issues on a daily basis. It is part of our commitment to provide broad public access to air quality information. Since air pollution is a complex subject this almanac can only serve as a starting point. However, we hope it provides a common basis for characterizing California's air quality and emissions. More detailed information on these subjects can be found on our website.

The almanac presents data from both statewide and regional perspectives. Regions are defined as air basins which share a common air mass. In terms of political jurisdictions, we also report data by county within an air basin. To understand trends, we report both current and historical air quality and emissions data.

From statewide summaries to more local county level information, the Almanac is intended to be a "go-to" resource for those interested in California's air quality. Ensuring easy and straightforward access to information on air quality, our progress, and the remaining challenges should help all Californians to do their part to achieve clean air.

I hope you find this Almanac informative and helpful. The Preface lists e-mail and telephone contacts for your questions or comments. For more information about air pollution, ways to combat it, or the Air Resources Board, please visit our web site at *www.arb.ca.gov*.



Chairman,
California Air Resources Board

Preface

This almanac was prepared and published by the Air Resources Board (ARB) staff to aid air quality professionals and the public in evaluating air quality in California (State). The ARB, as part of the California Environmental Protection Agency (CalEPA), is the State board responsible for achieving and maintaining healthful air quality in California. This responsibility is shared with local air districts and the United States Environmental Protection Agency (U.S. EPA).

The following staff and managers of the Planning and Technical Support Division contributed to the production of this almanac: Andy Alexis, Jeff Austin, Dr. Michael Benjamin, Vijay Bhargava, Steve Gouze, Chris Halm, Martin Johnson, Darryl Look, Sylvia Morrow, Chris Nguyen, John Nguyen, Marci Nystrom, Michael Redgrave, Dale Shimp, Webster Tasat, Jon Taylor, Dr. Patricia Velasco, and Xijie Zhang. The project was approved by Dr. Linda Murchison, Chief of the Planning and Technical Support Division. The project was managed by Karen Magliano, Chief of the Air Quality Data Branch, Richard Bode, Chief of the Emission Inventory Branch, Karen Buckley, Manager of the Emission Inventory Systems Section, Mena Shah, Manager of the Air Quality & Statistical Studies Section, and Gayle Sweigert, Manager of the Air Quality Analysis Section.

This is the eighth edition of this almanac which is updated annually as additional air quality and emission inventory data become available. If you find errors or have suggestions for improvements, please let us know. For general issues or issues related to air quality data, contact Paul Cox at (916) 327-7609 or *pcox@arb.ca.gov*. For issues related to emissions data, contact Martin Johnson at (916) 324-5783 or *mjohnson@arb.ca.gov*. For issues related to air toxics data, contact Robert Weller at (916) 322-6158 or *rweller@arb.ca.gov*.

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The California Almanac of Emissions and Air Quality - 2007 Edition

Chapter 1: *Introduction*

Chapter 2: *Current Emissions and Air Quality -- Criteria Pollutants*

Chapter 3: *Statewide Trends and Forecasts -- Criteria Pollutants*

Chapter 4: *Air Basin Trends and Forecasts -- Criteria Pollutants*

Chapter 5: *Toxic Air Contaminant Emissions, Air Quality, and Health Risk*

Chapter 1

Introduction

Overview

This almanac contains information about current and historical air quality and emissions in California. In addition, forecasted emissions are presented. This document is a reference for anyone interested in air quality and emissions for criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide) and toxic air contaminants (TACs). When using this information, please remember that the air quality and emission values are a snapshot of data at a particular point in time. This edition of the almanac is a year 2006 snapshot of the air quality and emission inventory databases. It is important to keep in mind that emission and air quality data can change over time. For example, emission data may be revised to reflect improved estimation methods, and air quality data may be changed because of corrections or additions of data.

The information in this document is based on data maintained in ARB's emission and air quality databases. The emission and human population estimates are presented at five-year intervals from 1975 to 2020. Data for vehicle miles traveled (VMT) are also provided at five-year increments, beginning with the year 1980. The air quality statistics in this almanac are for the period 1986 to 2005 for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. In addition, available 2006 statistics for ozone are included for the five major air basins. Particulate matter (PM) monitoring did not begin until 1988 for PM_{10} and 1999 for $PM_{2.5}$. Therefore, PM_{10} data cover the years 1988 to 2005, and $PM_{2.5}$ data cover the period 1999 through 2005. Air quality monitoring of TACs began in 1983; annual statistics for TACs are available from 1989 onward, and the data for TACs presented in this almanac covers the period 1990 to 2005.

What's New in the 2007 Almanac?

- Mobile source emission estimates based on new models EMFAC2007 and OFFROAD2007
- State 8-hour ozone statistics added throughout
- Quick Facts section added (Chapter 1)
- Ozone exposure graph added, along with statewide 8-hour exposure values (Chapter 3)
- Ozone trend maps added for the South Coast and San Joaquin Valley air basins (Chapter 4)

Organization

This document is divided into five chapters and six appendices that include information, maps, graphs, and tabular data. Chapter 1 contains introductory material. Chapters 2 through 4 and Appendices A and B provide information on the most important criteria pollutants for which health-based ambient air quality standards have been established. Chapter 5 and Appendix C provide information on TACs. Appendix D includes information on population and VMT, and Appendix E contains information on natural emissions. In addition to this information, Appendix F provides lists of the figures and tables included in Chapters 1 through 5 along with a glossary of Air Quality and Emissions terminology.

To help the reader navigate the document, a short summary of each chapter and appendix is provided below:

- **Chapter 1** contains introductory material designed to help the reader better understand the remaining chapters. Included is information about data interpretation, emission estimation, air quality monitoring, the State and national standards, web resources, area designations for the State and national standards, and TACs. A list of air pollution contacts is provided at the end of this chapter.

- **Chapter 2** includes current emissions for oxides of nitrogen (NO_x), reactive organic gases (ROG), PM_{10}, $PM_{2.5}$, CO, and ammonia (NH_3) and air quality data for ozone, PM_{10}, $PM_{2.5}$, and CO for each air basin. The emission data also includes lists of the State's highest emitting facilities. Information is included on how air quality in California compares to other parts of the country.

- **Chapter 3** provides historical emission and air quality trends from a statewide perspective. Statewide emission and air quality trends for ozone, PM_{10}, $PM_{2.5}$, CO, lead, and NO_2 are included. In addition, emission trends for oxides of sulfur (SO_x) are included.

- **Chapter 4** provides historical emission and air quality trends for the State's five most populated regions. The pollutants covered are ozone, PM_{10}, $PM_{2.5}$, CO, and NO_2.

- **Chapter 5** contains emission, air quality, and health risk information on TACs for the State as a whole and for five of California's most populated regions. The ten TACs, including diesel PM, that pose the greatest risk in ambient (outdoor) air are covered. The air quality and health risk trends are based on measured ambient data (except for diesel PM, which is based on estimates of ambient concentrations).

- **Appendix A** includes more detailed emission data for NO_x, ROG, PM_{10}, $PM_{2.5}$, and CO organized alphabetically, by air basin. Also included is a list of the highest emitting facilities in each air basin. Air quality data are provided for the criteria pollutants: ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2. Data are provided for all air basins and all counties (or county portions) within these air basins.

- **Appendix B** provides emission and air quality information similar to that found in Appendix A, but arranged by pollutant.

- **Appendix C** provides more detailed information on the ten TACs discussed in Chapter 5, including information on the emissions in each county and the air quality and health risk information for the individual sites where TAC concentrations are routinely measured.

- **Appendix D** provides tabulated information on surface area, population, and VMT for the State, each air basin, and for each county (or county portion) within the air basins.

- **Appendix E** provides emission estimates for natural sources, including wildfires, vegetation (biogenic sources), and oil seeps (geogenic sources).
- **Appendix F** provides lists of the figures and tables included in Chapters 1 through 5. A glossary of terms used in the Almanac is provided at the end of this appendix.

This almanac focuses on air emissions and air quality. The California Environmental Protection Agency (CalEPA) has developed a set of indicators to measure California's overall environmental health. The indicators cover all media, not just air, and help us understand the causes of environmental problems, the status of the environment, and the effectiveness of our environmental strategies. The data in this almanac are more detailed indicators of the State's air quality health, and in conjunction with CalEPA's indicators, provide a continuum of information from detailed air quality trends to California's overall environmental health. The most recent set of CalEPA indicators are available at www.oehha.ca.gov/multimedia/epic/.

California Facts and Figures

California is blessed with a wide range of scenery including mountains, valleys, oceans, and deserts. In terms of size, California is larger than many nations in the world today. Of California's total area, about 152,000 square miles are land, and almost 8,000 square miles are water.

The Pacific Ocean forms the western boundary of California, with a coastline more than 1,200 miles long. These coastal areas range from southern California's sunny beaches to northern California's fog-shrouded redwood forests. The inland valleys, with their hot summers and cool winters, have millions of acres of cropland. The Sierra Nevada in the eastern half of California runs nearly two-thirds the length of the State. Most of the southeastern portion of the State is desert, varying from sun-baked Death Valley to the scenic mountain ranges of the Mojave Desert. To a large degree, California's pleasant climate and abundance of relatively level land are the major features that have drawn people to the State.

Quick Facts

Over the last 30 years, California's population has doubled and its economy has prospered. However, despite substantial growth, California has made dramatic progress in improving air quality.

- The population increased 56 percent since 1980 and the vehicle miles traveled during this same period more than doubled.
- Emissions of ROG and NO_x have been reduced by 63 percent and 28 percent, respectively, over the last 25 years.
- The number of unhealthy days with concentrations exceeding State ozone and PM standards decreased by an average of nearly 35 percent over the last 15 years.
- Population exposure to values above the State 8-hour ozone standard dropped an average of nearly 70 percent in the major urban areas over the last 20 years.
- The entire state is now designated as attainment for the State and national CO standards.

Despite the magnitude of progress, ozone and PM remain major air quality challenges.

- Today, nearly all Californians (about 99 percent) live in areas that are designated as nonattainment for the State health-based ozone and/or PM standards. Additionally, about 93 percent live in areas that are designated as nonattainment for the national health-based ozone and/or PM standards.
- Ozone and PM concentrations in the areas with the most severe problems can be as high as two to three times the level of the State standards on the worst days.
- In the areas with the worst air quality problems, the State ozone and PM standards can be exceeded up to 200 days per year.

Information on the following pages provides a more in-depth description of the current ozone and PM problems in California.

Quick Facts

Ozone

This map provides a quick look at the ozone air quality in California. It shows the number of unhealthy days with concentrations greater than the State ozone standard (exceedance days) that occurred in each air basin during 2005. It is important to keep in mind that the number of exceedance days reflects all sites in the basin and that the number can be influenced by a few high sites. This map does not show how air quality differs spatially within an area (see Chapter 4).

Figure 1-1

The ozone air quality problem varies across the State. There are some rural and coastal areas with none to a few exceedance days. Higher values are found in the more urbanized inland areas and desert regions, with over 50 percent of the State's population living in areas with 100 or more days exceeding the State 8-hour standard.

- California's coastal regions have a temperate climate, with relatively cool temperatures and a pattern of onshore/offshore airflow. Both of these factors favor relatively good air quality. As shown in Figure 1-1, most coastal areas, including the Bay Area, Monterey, Santa Barbara, and San Diego have a small number of exceedance days compared to the inland regions.
- Inland valleys have many more days with sunshine and high temperatures that provide favorable conditions for ozone formation. In addition, frequent temperature inversions coupled with surrounding mountains limit the dispersion of pollutants. The inland regions of the South Coast, San Joaquin Valley, and portions of the Sacramento region have the most severe ozone air quality problems in the State.
- Further inland, the desert regions pose their own challenges to air quality progress. These regions can be the recipients of ozone transported from upwind areas. Therefore, their progress is linked to the progress made upwind. In addition, the desert regions have more days throughout the year with sunshine and high temperatures, which can contribute to locally generated ozone. The desert regions include the Mojave Desert and eastern Kern, eastern Riverside, and Imperial counties.
- Ozone air quality still poses a substantial challenge in California, but both the maximum concentrations and the number of exceedance days continue to decline. Areas have made tremendous progress over the past several decades. However, despite

this progress, the maximum measured 1-hour and 8-hour ozone concentrations in the worst areas were both about twice the level of the respective State standard during 2005. Without a doubt, there is much more to accomplish.

Particulate Matter

The following map shows the estimated number of days in which the State 24-hour PM_{10} standard was exceeded in each air basin of California. Unlike the ozone map on the previous page which shows an exact count of basinwide exceedance days, the PM_{10} map shows an estimated number of exceedance days. Because PM_{10} samples are sampled only once every 6 days, we estimate the total by extrapolating from the percentage of total monitored days that exceeded the standard. In addition, on the PM_{10} map the PM_{10} data for each air basin reflect only the number of estimated exceedances at the one site with the highest total, whereas the ozone map reflects a composite of exceedance days at all sites in the air basin.During 2005, in the North Coast and San Diego air basins, data for the high site were incomplete.

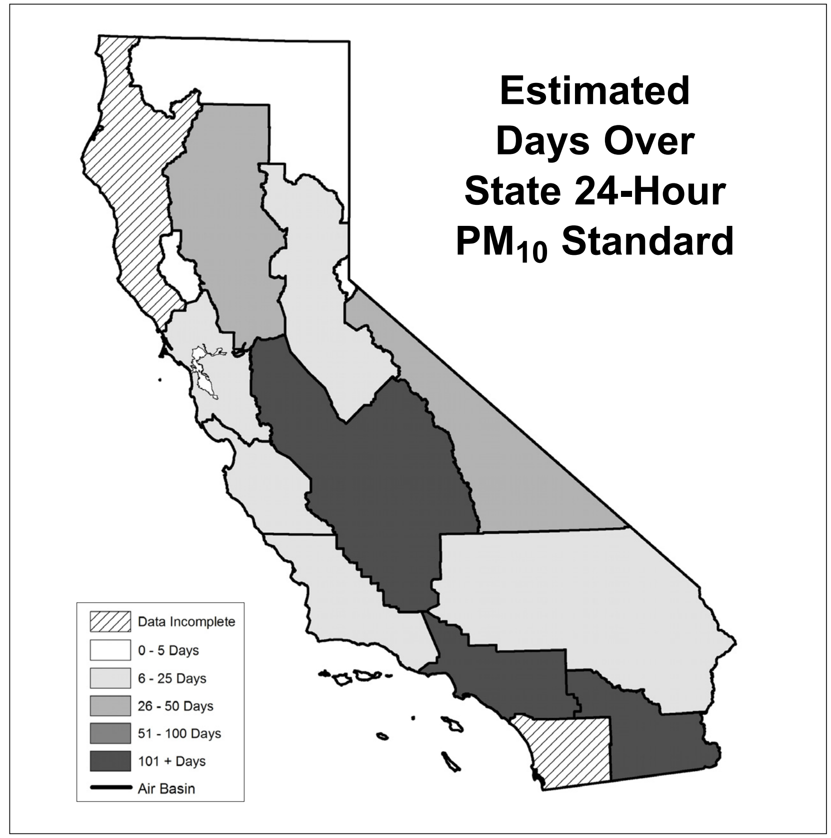

Figure 1-2

- Generally, the greatest number of estimated exceedance days occurred at sites in the urbanized areas during 2005.
- There were also a relatively high number of days in the Great Basin Valleys Air Basin, where high winds aggravate the local PM_{10} problem.
- In the areas where the estimated number of exceedance days are highest, the South Coast, San Joaquin Valley, and Salton Sea air basins, the number tends to be very high. All three of these areas had well over 100 estimated exceedance days during 2005: 198 in South Coast, 160 in Salton Sea, and 146 in San Joaquin Valley.
- Although not shown here, annual PM_{10} concentrations in the worst urban areas were over twice the level of the State PM_{10} standard (in 2005, a maximum of 44 micrograms per cubic meter ($\mu g/m^3$) in the San Joaquin Valley Air Basin and 50 $\mu g/m^3$ in the South Coast Air Basin, compared with a standard of 20 $\mu g/m^3$). In contrast, peak 24-hour concentrations in the worst urban areas were up to three times the level of the State standard (in 2005, a maximum of 154 $\mu g/m^3$ in San Diego, 137 $\mu g/m^3$ in San Joaquin Valley, and 131 $\mu g/m^3$ in South Coast, compared with a standard of 50 $\mu g/m^3$).
- Similar to ozone, PM_{10} still poses substantial challenges. However, over the last 15 years, almost all areas show progress, although at a slower rate relative to ozone. Additional emission controls will be needed to attain the PM_{10} standards in all areas of the State.

Interpreting the Emission and Air Quality Statistics

Interpreting Criteria Pollutant Emission and Air Quality Statistics. A number of pollutant trends are presented in this almanac. Emission and air quality trends for the same pollutant are usually correlated. In some cases, however, the two trends may differ, at least in terms of the rate of increase or decrease. The comparison of emission trends to air quality trends is complex, and a number of confounding factors can affect the resulting trends, such as the impacts of ozone and transported PM from one area to another. An area can show a stable (or flat) emission trend because local emission growth offsets the reductions achieved through technology, but this same area may show an improvement in air quality because ambient concentrations reflect the impact of transport from an upwind region that has improved. Other factors that can affect air quality are meteorology, which can cause large differences from year-to-year, and changes in monitoring sites (both site closures and the establishment of new sites). In addition, the emission data and some air quality statistics are based on estimates. These estimates use the best available methods, however, they embody some degree of uncertainty. All of these factors should be kept in mind when using and interpreting the trends.

Emission inventory trends make use of historical emission inventory data and projections based on expectations of future economic and population growth and emission controls. The historical emission inventory data in this almanac were updated to reflect improvements in emission inventory methodologies. The future year projections for stationary and areawide sources were developed using the California Emission Forecasting System (CEFS) model assuming a 2006 base year and California-specific economic projections. These economic projections were prepared by E.H. Pechan and Associates and reflect information provided by local air districts. The stationary source emission forecasts reflect control measure information received from local air districts as of September 2006. Future year emission projections for on- and off-road vehicles were developed using the ARB EMFAC2007 and OFFROAD2007 models, respectively. State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at *www.arb.ca.gov/sip/siprev1.htm*.

In general, the criteria pollutant air quality trends in this almanac represent data that have been summarized from a network of monitoring sites to characterize the air quality in a particular region (for example, a county or air basin). Whenever data are summarized, the resulting statistics may be influenced by a number of factors, including the number of monitoring sites in operation and the completeness of the data. To help in interpreting the air quality trends, the ARB has included information on the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico in its publication titled: *"California State and Local Air Monitoring Network Plan - 2006"*. This report is available on the web at *www.arb.ca.gov/aqd/netrpt/netrpt.htm*, or from the ARB's Planning and Technical Support Division by calling (916) 322-5350.

A number of air quality statistics or indicators are used in this document. In general, 1-hour, 8-hour, and 24-hour concentrations reflect measured values and can be summarized by day, season, or year. These data are also used to determine the number of days in which State or national standards were exceeded. For the most part, this almanac provides data summarized as annual values. In contrast to measured values, the peak indicators are calculated values based on measured data. The peak indicator is used throughout the almanac for air quality trends for State standards. It represents the maximum concentration expected to be exceeded no more than once per year, on average, based on the distribution of the data for each monitoring site. Because it is based on a robust statistical calculation using three years of data, it is relatively stable, thereby providing a trend indicator that is not highly influenced by year-to-year changes in weather. Finally, it is important to point out that the calculated number of days above the State and national PM_{10} and $PM_{2.5}$ standards differ from other pollutants in that they are statistically derived from the measured data. This is because PM monitoring does not occur every day.

Interpreting the Toxic Air Contaminant Emission and Air Quality Statistics. This almanac includes emission data, ambient concentrations, and health risk estimates for the ten toxic air contaminants (TACs) that generally pose the greatest known ambient risk in California. A TAC is defined as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (Health and Safety Code section 39655). Numerous factors influence ambient measurements of TACs, and a number of assumptions are embodied in the summary statistics. Only the most important factors are summarized below.

The toxics emission inventory for 2006 represents the most current inventory compiled by the ARB staff. The toxic emissions for stationary sources include emission data from the AB 2588 Air Toxics "Hot Spots" Program. For all source categories associated with diesel fuel combustion, all PM emitted from these sources was considered "diesel PM." The areawide source emissions were estimated by either the local air districts or the ARB staff. These toxic emission estimates were developed by speciating criteria emissions. Emission estimates for the other mobile source categories are primarily from ARB's OFFROAD2007 model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local air districts or ARB staff. Local air districts may also provide estimates for categories usually developed by ARB staff. In this case, toxic emissions for all area sources and mobile sources are estimated by speciating criteria pollutants with category specific profiles. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC2007. Again, the emission estimates have been speciated for toxics.

Air quality statistics are based on the analysis of monitoring data collected by the ARB. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here. Based on available data, the ten TACs that pose the greatest known ambient risk are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM).

The ARB established the TAC network after the California Legislature enacted a program in 1983 to identify the health effects of TACs and reduce their exposure to protect the public health. The network measures the presence of TACs in the ambient air, and statewide toxics monitoring data are available from 1989 onwards. In general, TAC concentrations are sampled once every twelve days, for an average of two to three samples per month. The measured concentrations are used to represent average statewide concentrations and health risk. It is important to note that actual concentrations can vary from one location to another, and local concentrations and risks may be either higher or lower than the average values. The ARB has also been involved in efforts to better characterize local and community-wide exposures, and more information on these studies is available at *www.arb.ca.gov/ch/ch.htm*.

Since the TAC network began operation, there have been some site changes. In several cases, the site changes occurred during the middle of a year. Because the site-by-site statistics presented in Appendix C do not combine concentrations measured at different sites, an annual average for the year during which the site change occurred will be missing for those sites. Since all of the valid monthly means from each site are included in the air basin or statewide annual average, the site changes may lead to some variation in year-to-year statistics. In particular, the average health risk estimates may include a varying number of compounds and sites. Therefore, they may not be directly comparable from one year to the next. Site changes in each of the five major air basins are described in Chapter 5.

During the normal course of monitoring, most of the TACs have experienced some missing data due to sampling or analysis problems, and several TACs show substantial gaps in their data record. The every 12 days sampling schedule only allows for two or three samples to be collected at each site during any month. In order to calculate a valid annual average (a mean of monthly means), each month during the year must have at least one valid measurement. Therefore, if there are no valid data in any given month, data for the year will appear to be missing, even though some data may be available.

In some cases, TAC concentrations are below the level that an instrument can reliably measure. For these measurements, the values are assumed to be one-half the detection limit when estimating an annual average. Table 5-1 in Chapter 5 lists the detection limits for the ten TACs discussed in this almanac. It is important to note that the concentrations and health risk estimates presented in this almanac are based on ambient outdoor measurements. They do not account for any indoor exposures to TACs, which can contribute significantly to individual health risk.

The health risk estimates reflect the estimated number of excess cancer cases per million people exposed over a 70-year period. These data are very useful for comparing relative health risks for the ten compounds considered (e.g., comparing the level of health risk for one compound or area relative to another). However, it is important to note that there are varying degrees of uncertainty associated with these data. The risks presented are only for the ten compounds considered. In addition, the risk is for the general population's outdoor exposure, and actual health risk may be higher or lower than reported here. Furthermore, a number of factors add to the uncertainty, including the assumptions of the underlying risk factors, the assumption of a constant 70-year exposure, measurement biases and uncertainties, and the absence of ambient air quality data for other TACs that may pose a substantial health risk. Since risk data do not have precision at the tenth decimal place, risks that are less than one excess cancer case per million people are expressed as "<1".

Meteorology's Role in Air Quality

This almanac presents air quality trends for a 20-year period. These trends reflect the progress achieved through a long history of emission control programs. Besides emissions, the trends are affected by meteorology (weather) and terrain. Meteorology causes year-to-year changes in air quality trends that can mask the benefits of emission reductions. Therefore, this almanac focuses on long-term rather than short-term trends.

Meteorology does not affect all pollutants in all places the same way. Ozone is formed in the atmosphere as sunlight initiates a complex set of chemical reactions. On hot sunny days, the abundant sunlight starts the ozone-forming processes and high temperatures promote fast chemical reactions. If the air is stagnant, the ozone formed is not dispersed or diluted by cleaner air. So, the highest ozone concentrations usually occur on hot and sunny days with light breezes or calm air. In some areas, high ozone levels may represent transport from upwind regions; local weather conditions associated with transport may differ from place to place. Since hot and sunny summer days typically lead to high ozone, it is not surprising that cold and cloudy winter days have much lower concentrations.

California's terrain also plays a role in promoting high levels of pollutants. The mountains that surround the San Joaquin Valley and those that form a barrier to the east of the Los Angeles area tend to retain air within these basins, which limits the dispersion of all pollutants, including ozone.

Meteorology affects PM, though some of its effects on PM differ from its effects on ozone. Ambient PM is comprised of primary PM that is directly emitted and secondary PM that forms in the atmosphere through chemical and physical processes. Primary PM includes dust and soot, while secondary PM includes particulate nitrates and sulfates. Some areas are subject to strong winds that lift dust into the air resulting in high concentrations of primary PM. On November 29, 1991, dry hurricane-force winds in the San Joaquin Valley created a massive dust storm and extremely high PM levels. In other situations, cold, calm, and humid air can promote the buildup of secondary PM. Relatively high PM levels in the South Coast and San Joaquin Valley often occur in the winter under these meteorological conditions. Because winds disperse PM and rain washes PM out of the air, the lowest PM concentrations often occur on rainy winter days.

Meteorology impacts air quality, and year-to-year variations in meteorology can affect year-to-year changes in ambient air quality trends. As a result, meteorological variations add to the difficulty of interpreting long-term air quality trends. However, data for meteorological parameters such as temperature, wind speed, and wind direction can help characterize a year with respect to the weather conditions influencing air pollution. For example, an analysis of daily weather conditions in the South Coast Air Basin showed that there were many days during 1981, 1994, 1995, and 2003 with weather conditions favoring high levels of ozone. In contrast, there were fewer such days during 1986, 1987, 1991, and 1993. A similar analysis of daily weather conditions in the San Joaquin Valley showed a higher than average number of days with high ozone forming potential during 1994, 1996, 2001, 2002, and 2003, while 1997, 1998, and 1999 had a lower than average numbers of such days. Similar to ozone, annual average PM concentrations are also affected by meteorology – in particular, rainfall. In northern California, 1998 had many rainy days which resulted in lower annual average PM concentrations. In contrast, the following year was quite dry, and annual average PM concentrations increased. These year-to-year variations in the average meteorological conditions are reflected in the long-term pollutant trends.

A full accounting of the impact of weather on pollution levels is desirable but challenging. ARB is currently developing methods to account for these impacts when evaluating air qualiy trends.

The Web Resources Section provides information on how to access sources of meteorological data. Sources such as ARB's real-time Air Quality and Meteorological Information System (AQMIS2) allow access to various wind parameters including wind speed/direction, temperature, humidity, and visibility.

Sources of Emissions in California

California is a diverse state with many sources of air pollution. To estimate the sources and quantities of pollution, the ARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources.

Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. Area-wide emissions are estimated by ARB and local air district staffs. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. Mobile source emissions are estimated by ARB staff with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. Natural sources are also estimated by the ARB staff and the air districts. These sources include biogenic hydrocarbons, geogenic hydrocarbons, natural wind-blown dust, and wildfires.

For the inventoried emission sources, the ARB compiles emission estimates for both the criteria pollutants and TACs. Chapters 2 through 4 and Appendices A and B focus on five criteria pollutants: ozone, PM, CO, NO_2, and SO_2. Emissions related to these criteria pollutants include reactive organic gases (ROG), oxides of nitrogen (NO_x), CO, oxides of sulfur (SO_x), ammonia (NH_3), and directly emitted PM_{10} and $PM_{2.5}$.

While some pollutants, such as CO, are directly emitted, others are formed in the atmosphere from *precursor emissions*. Such is the case with ozone, which is formed in the atmosphere when ROG and NO_x precursor emissions react in the presence of sunlight. PM which includes PM_{10} and $PM_{2.5}$, is a complex pollutant that can either be directly emitted or formed in the atmosphere from precursor emissions. PM precursors include NO_x, ROG, SO_x, and NH_3. Examples of directly emitted PM include dust and soot.

Hydrocarbon is a general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive. Emissions of *Total Organic Gases* (TOG) and *Reactive Organic Gases* (ROG) are two classes of hydrocarbons measured for California's emissions inventory. TOG includes all hydrocarbons, both reactive and non-reactive. In contrast, ROG includes only the reactive hydrocarbons.

In addition to information about the criteria pollutants, Chapter 5 and Appendix C focus on the ten TACs that pose the greatest potential health risk, primarily based on statewide ambient air quality data. These ten TACs are: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. Excluding diesel PM, the remaining nine TACs represent about 94 percent of the potential health risk as measured through the statewide TAC air monitoring network. Although diesel PM is not currently monitored, emissions and modeled ambient concentrations indicate that diesel PM has a higher health risk than the other nine compounds combined. It is important to note that there may be other compounds that pose a substantial risk, but have not yet been identified as a concern and which data are not yet available or are currently under review.

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Air Quality Monitoring

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. The ARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors.

As shown in Figure 1-3, there are more than 250 criteria pollutant monitoring sites in California. Currently, the ARB also monitors ambient concentrations of TACs at 17 of these sites. In addition to the California sites, a few monitoring sites are located in Mexico. These sites were established in cooperation with the U.S. EPA and the Mexican government to monitor the cross-border transport of pollutants and pollutant precursors.

Each year, more than ten million air quality measurements from all of these sites are collected and stored in a comprehensive air quality database maintained by the ARB. To ensure the integrity of the data, the ARB routinely conducts audits and reviews of the monitoring instruments and the resulting data.

Figure 1-3

California Air Basins

California contains a wide variety of climates, physical features, and emission sources. This variety makes the task of improving air quality complex, because what works in one area may not be effective in another area. To better manage common air quality problems, California is divided into 15 air basins, as shown in Figure 1-4 and Table 1-1. The ARB established the initial air basin boundaries during 1968.

An air basin generally has similar meteorological and geographical conditions throughout. To the extent possible, the air basin boundaries follow along political boundary lines and are defined to include both the source area and the receptor area. However, air masses can move freely from basin to basin. As a result, pollutants such as ozone and PM, as well as their precursors, can be transported across air basin boundaries, and interbasin transport is a reality that must be dealt with in air quality programs. Although established in 1968, the air basin boundaries have been changed several times over the years, to provide for better air quality management.

Figure 1-4

List of Counties in Each Air Basin

Great Basin Valleys Air Basin
- Alpine
- Inyo
- Mono

Lake County Air Basin
- Lake

Lake Tahoe Air Basin
- El Dorado (portion)
- Placer (portion)

Mojave Desert Air Basin
- Kern (portion)
- Los Angeles (portion)
- Riverside (portion)
- San Bernardino (portion)

Mountain Counties Air Basin
- Amador
- Calaveras
- El Dorado (portion)
- Mariposa
- Nevada
- Placer (portion)
- Plumas
- Sierra
- Tuolumne

Table 1-1

North Central Coast Air Basin
- Monterey
- San Benito
- Santa Cruz

North Coast Air Basin
- Del Norte
- Humboldt
- Mendocino
- Sonoma (portion)
- Trinity

Northeast Plateau Air Basin
- Lassen
- Modoc
- Siskiyou

Sacramento Valley Air Basin
- Butte
- Colusa
- Glenn
- Placer (portion)
- Sacramento
- Shasta
- Solano (portion)
- Sutter
- Tehama
- Yolo
- Yuba

List of Counties in Each Air Basin

Salton Sea Air Basin
- Imperial
- Riverside (portion)

San Diego Air Basin
- San Diego

San Francisco Bay Area Air Basin
- Alameda
- Contra Costa
- Marin
- Napa
- San Francisco
- San Mateo
- Santa Clara
- Solano (portion)
- Sonoma (portion)

San Joaquin Valley Air Basin
- Fresno
- Kern (portion)
- Kings
- Madera
- Merced
- San Joaquin
- Stanislaus
- Tulare

Table 1-1 (continued)

South Central Coast Air Basin
- San Luis Obispo
- Santa Barbara
- Ventura

South Coast Air Basin
- Los Angeles (portion)
- Orange
- Riverside (portion)
- San Bernardino (portion)

Criteria Air Pollutants

California and National Ambient Air Quality Standards

Very simply, an ambient air quality standard is the definition of "clean air." More specifically, a standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly. Both the California and federal governments have adopted health-based standards for the *criteria pollutants*, which include but are not limited to ozone, PM_{10}, $PM_{2.5}$, and CO. U.S. EPA recently revised the national PM standards. Information on the new standards can be found on the U.S. EPA's website at *www.epa.gov/air/particlepollution/actions.html*.

For most pollutants the State standards are more stringent than the national standards. The differences in the standards are generally explained by the different health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the State standards incorporate a margin of safety to protect sensitive individuals (an abbreviated list of the State and national ambient air quality standards can be found on page 1-22, while a complete list can be found on the ARB website at *www.arb.ca.gov/research/aaqs/aaqs.htm*). In general, the air quality standards are expressed as a measure of the amount of pollutant per unit of air. For example, the PM standards are expressed as micrograms of particulate matter per cubic meter of air ($\mu g/m^3$) and the ozone standards are expressed in parts per million (ppm).

Ozone

Ozone, a colorless gas which is odorless at ambient levels, is the chief component of urban smog. Ozone is not directly emitted as a pollutant, but is formed in the atmosphere when hydrocarbon and NO_x precursor emissions react in the presence of sunlight. Meteorology plays a major role in ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and cloudless skies provide the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often impacts a large area.

Ozone impacts lung function by irritating and damaging the respiratory system. In addition, ozone causes damage to vegetation, buildings, rubber, and some plastics. To protect the public against chronic health effects from day-long episodes to unhealthy ozone concentrations, both the ARB and U.S. EPA adopted 8-hour average ozone standards. ARB also has a State 1-hour standard, which is designed to protect the public against acute exposures from elevated short-term ozone concentrations. In contrast, the U.S. EPA has recently revoked the national 1-hour ozone standard.

In 2004, U.S. EPA designated areas of the country that exceed the national 8-hour ozone standard as nonattainment. The designations can be accessed at U.S. EPA's website at *www.epa.gov/ozonedesignations*. These designations trigger new planning requirements for the national 8-hour standard. State Implementation Plans (SIPs) are due to the U.S. EPA in 2007. Information on the 8-hour ozone implementation rule can be accessed at *www.epa.gov/ttn/naaqs/ozone/o3imp8hr*. In addition, ARB made first-time designations incorporating the new State 8-hour standard in 2006.

State Ozone Standards:
0.070 ppm for 8 hours,
not to be exceeded *and*
0.09 ppm for 1 hour,
not to be exceeded.

National Ozone Standard:
0.08 ppm for 8 hours,
not to be exceeded,
based on the fourth highest
concentration averaged
over three years.

Table 1-2

Particulate Matter (PM_{10} and $PM_{2.5}$)

Exposure to PM aggravates a number of respiratory illnesses and may even cause early death in people with existing heart and lung disease. Both long-term and short-term exposure can have adverse health impacts. All particles with a diameter of 10 microns or smaller (PM_{10}) are harmful. For comparison, the diameter of a human hair is about 50 to 100 microns. PM_{10} includes the subgroup of finer particles with an aerodynamic diameter of 2.5 microns or smaller ($PM_{2.5}$). These finer particles pose an increased health risk because they can deposit deep in the lung and contain substances that are particularly harmful to human health.

PM is a mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, sulfates, and organic compounds; and complex mixtures such as diesel exhaust and soil. These substances may occur as solid particles or liquid droplets. Some particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere.

In 1982, the ARB adopted 24-hour average and annual average PM_{10} standards. National ambient air quality standards for PM_{10} have been in place since 1987. However, California's PM_{10} standards are more health-protective.

In June 2002, the ARB lowered the level of the PM_{10} annual standard from 30 $\mu g/m^3$ to 20 $\mu g/m^3$ and established a new annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. The ARB plans to review short-term PM exposure studies in the future to determine if the current State 24-hour PM standards adequately protect public health. Additional information on the State PM standards is available on the ARB's website at *www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm.*

The U.S. EPA promulgated new national ambient air quality standards for $PM_{2.5}$ in 1997 (annual of 15 $\mu g/m^3$ and 24-hour of 65 $\mu g/m^3$) to complement the national PM_{10} standards. SIPs for these standards are due in Spring 2008. In 2006, U.S. EPA strengthened the 24-hour $PM_{2.5}$ standard (to 35 $\mu g/m^3$) and revoked the annual PM_{10} standard. SIPs for the revised $PM_{2.5}$ standard are due in 2012.

State PM_{10} Standards:
50 $\mu g/m^3$ for 24 hours
not to be exceeded *and*
20 $\mu g/m^3$ annual arithmetic mean,
not to be exceeded.

State $PM_{2.5}$ Standard:
12 $\mu g/m^3$ annual arithmetic mean,
not to be exceeded.

National PM_{10} Standard:
150 $\mu g/m^3$ for 24 hours, not to be exceeded,
more than once per year.

National $PM_{2.5}$ Standards:
35 $\mu g/m^3$ for 24 hours based on the
98th percentile concentration averaged
over three years, not to be exceeded *and*
15 $\mu g/m^3$ annual arithmetic mean
averaged over 3 years, not to be exceeded.

Table 1-3

Carbon Monoxide

Carbon monoxide is a colorless and odorless gas that is directly emitted as a by-product of combustion. The highest concentrations are generally associated with cold stagnant weather conditions that occur during winter. In contrast to ozone, which tends to be a regional pollutant, CO problems tend to be localized.

Carbon monoxide is harmful because it is readily absorbed through the lungs into the blood, where it binds with hemoglobin and reduces the ability of the blood to carry oxygen. As a result, insufficient oxygen reaches the heart, brain, and other tissues. The harm caused by CO can be critical for people with heart disease (angina), chronic lung disease, or anemia, as well as for unborn children. Even healthy people exposed to high levels of CO can experience headaches, fatigue, slow reflexes, and dizziness. Health damage caused by CO is of greater concern at high elevations where the air is less dense, aggravating the consequences of reduced oxygen supply. As a result, California has a more stringent CO standard for the Lake Tahoe Air Basin.

State CO Standards:

20 ppm for 1 hour *and*
9.0 ppm for 8 hours,
neither to be exceeded.

6 ppm for 8 hours
(Lake Tahoe Air Basin only),
not to be equaled or exceeded.

National CO Standards:

35 ppm for 1 hour *and*
9 ppm for 8 hours,
neither to be exceeded more than once per year.

Table 1-4

Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration	Primary[3]	Secondary[4]
Ozone (O_3)	1 Hour	0.09 ppm	—	—
	8 Hour	0.070 ppm	0.08 ppm	Same as Primary Standard
Particulate Matter (PM_{10})	24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	20 $\mu g/m^3$	—	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	35 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	8 Hour	9.0 ppm	9 ppm	None
	1 Hour	20 ppm	35 ppm	
	8 Hour (Lake Tahoe)	6 ppm	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Same as Primary Standard
	1 Hour	0.18 ppm	—	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.030 ppm	—
	24 Hour	0.04 ppm	0.14 ppm	—
	3 Hour	—	—	0.5 ppm
	1 Hour	0.25 ppm	—	—
Lead	30 Day Average	1.5 $\mu g/m^3$	—	—
	Calendar Quarter	—	1.5 $\mu g/m^3$	Same as Primary Standard

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
4. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Table 1-5

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California and National Area Designations

Both the California and federal governments use monitoring data to designate areas according to their attainment status for most of the pollutants with ambient air quality standards. The purpose of the designations is to identify those areas with air quality problems and thereby initiate planning efforts to make the air more healthful. There are three basic designation categories: nonattainment, attainment, and unclassified. In addition, the State designations include a subcategory of the nonattainment designation, called nonattainment-transitional. The nonattainment-transitional designation is given to nonattainment areas that are making progress and nearing attainment.

A *nonattainment designation* indicates that the air quality violates an ambient air quality standard. Although a number of areas may be designated as nonattainment for a particular pollutant, the severity of the problem can vary greatly. For example, in two ozone nonattainment areas, the first area has a measured maximum concentration of 0.13 ppm, while the second area has a measured maximum concentration of 0.23 ppm. While both areas are designated as nonattainment, it is obvious that the second area has a more severe ozone problem and will need a more stringent emission control strategy. To identify the severity of the problem and the extent of planning required, ozone and PM nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe).

In contrast to nonattainment, an *attainment designation* indicates that the air quality does not violate the established standard. Under the federal Clean Air Act, nonattainment areas that are redesignated as attainment must develop and implement maintenance plans designed to assure continued compliance with the standard.

Finally, an *unclassified designation* indicates that there are insufficient data for determining attainment or nonattainment. The U.S. EPA combines unclassified and attainment into one designation for ozone, PM_{10}, $PM_{2.5}$ and CO. More detailed information on the area designation categories can be found on the ARB's website at *www.arb.ca.gov/desig/desig.htm*.

Ozone - State Area Designations

On April 28, 2005, the ARB approved the nation's most health-protective ozone standard, with special consideration for children's health. The new 8-hour average standard of 0.070 ppm will further protect California's most vulnerable population from the chronic adverse health effects associated with ground-level ozone, or smog. ARB retained the 1-hour standard of 0.09 ppm to continue to protect the public from health effects associated with acute short-term exposures.

The 2006 State ozone designations have been approved by the Board and the Office of Administrative Law and will be effective July 26, 2007. The designation map on this page reflects the designations as approved by the Board.

These designations reflect both the 1-hour and 8-hour standards. In order to be designated as attainment, an area must meet both standards. Because the 8-hour standard is more health-protective, there are now more nonattainment areas than during previous years, when only the 1-hour standard was in effect.

As indicated on the map, only a few areas attain the State ozone standards. However, new air quality plans and emission controls strategies will continue to reduce emissions and move areas closer to attainment.

Figure 1-5

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Ozone - National 8-Hour Area Designations

On April 15, 2004, the U.S. EPA made first time designations for the national 8-hour ozone standard. These designations became effective on June 15, 2004. An area violates the national 8-hour ozone standard if the calculated fourth highest 8-hour concentrations averaged over a three-year period exceeds the level of the standard at any monitoring site in the region. There are 15 nonattainment areas in California, including the State's five largest urban areas. In addition, a number of smaller counties and rural areas exceed the standard. California has 8-hour ozone SIPs under development for submittal to the U.S. EPA in 2007.

Figure 1-6

PM_{10} - State Area Designations

The majority of California is designated as nonattainment for the State PM_{10} standards. Three areas in the northern half of the State, Siskiyou County, Lake County, and Northern Sonoma Air District, have been designated as attainment.

PM_{10} remains a widespread problem, and its causes are very diverse. Because of the variety of sources and the size and chemical make-up of the particles, the PM_{10} problem can vary considerably from one area to the next. In addition, high PM_{10} concentrations are seasonal, and the high season varies from area to area. For example, in some areas, windblown dust may contribute to high PM_{10} concentrations in the summer and fall, while in other areas, high concentrations due to secondary particles may occur during the winter. As a result, two areas with similar PM_{10} concentrations may have very different PM_{10} problems, and multiple control strategies are needed to effectively deal with these problems.

Figure 1-7

PM_{10} - National Area Designations

In contrast to the State PM_{10} designations, there are only two designation categories for the national PM_{10} standard: attainment/unclassified and nonattainment. Areas designated as nonattainment for the national PM_{10} standard are required to develop and implement plans designed to meet the standard. Although they are still designated as nonattainment, Sacramento County, San Joaquin Valley Air Basin, Mammoth Lakes, Trona (northwestern San Bernardino County), and the portion of San Bernardino County outside of the South Coast Air Basin now meet the national PM_{10} standards.

Figure 1-8

$PM_{2.5}$ - State Area Designations

California adopted the new $PM_{2.5}$ standard in 2002, and this is the fourth year of area designations for the State $PM_{2.5}$ standard. Approximately half of California is designated as nonattainment for the State $PM_{2.5}$ standard, with the Lake County, Lake Tahoe, and North Central Coast air basins and San Luis Obispo County designated as attainment. Nonattainment areas include all of the major urban areas, as well as a few rural areas. Secondary formation of $PM_{2.5}$ and particles directly emitted from combustion processes are major contributors to high $PM_{2.5}$ concentrations in these areas.

California's programs to reduce ozone, PM_{10}, and diesel PM are also helping reduce $PM_{2.5}$. In addition, as required by legislation enacted in 2003 (Senate Bill 656), ARB assembled a list of measures that can be used by air districts to further reduce PM and PM precursors. Air districts recently adopted implementation schedules for a subset of these measures to address the nature and severity of their PM problem. This list is available on the web at *www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm*.

Figure 1-9

$PM_{2.5}$ - National Area Designations

The U.S. EPA promulgated first time area designations for $PM_{2.5}$ in early 2005. The San Joaquin Valley and South Coast air basins are the only two areas designated as nonattainment. These air basins include major urban areas, as well as some rural areas. Reactions in the atmosphere from precursor gases emitted from combustion sources and direct particulate emissions from mobile sources and burning activities lead to high $PM_{2.5}$ concentrations in these areas. The remaining areas of the State are designated as unclassified.

SIPs for $PM_{2.5}$ nonattainment areas are scheduled for submittal in early 2008. U.S. EPA will promulgate area designations for the recently tightened 24-hour $PM_{2.5}$ standard in 2010. Nonattainment areas will submit SIPs in early 2013. Meanwhile, actions taken to reduce ozone, PM_{10}, and diesel PM will also help in reducing $PM_{2.5}$.

Designations Effective April 2005
Figure 1-10

Carbon Monoxide - State Area Designations

Currently, there are no areas in the State that exceed the State CO standards. The City of Calexico, in Imperial County, was the last area with concentrations exceeding the standards.

California has made tremendous progress in reducing CO concentrations in the last 12 years, during which a number of areas were redesignated as attainment. Most recently, the City of Calexico was redesignated as attainment. Los Angeles County was also redesignated as attainment in early 2005. Much of the progress in reducing ambient CO is attributable to motor vehicle controls and the introduction of cleaner fuels.

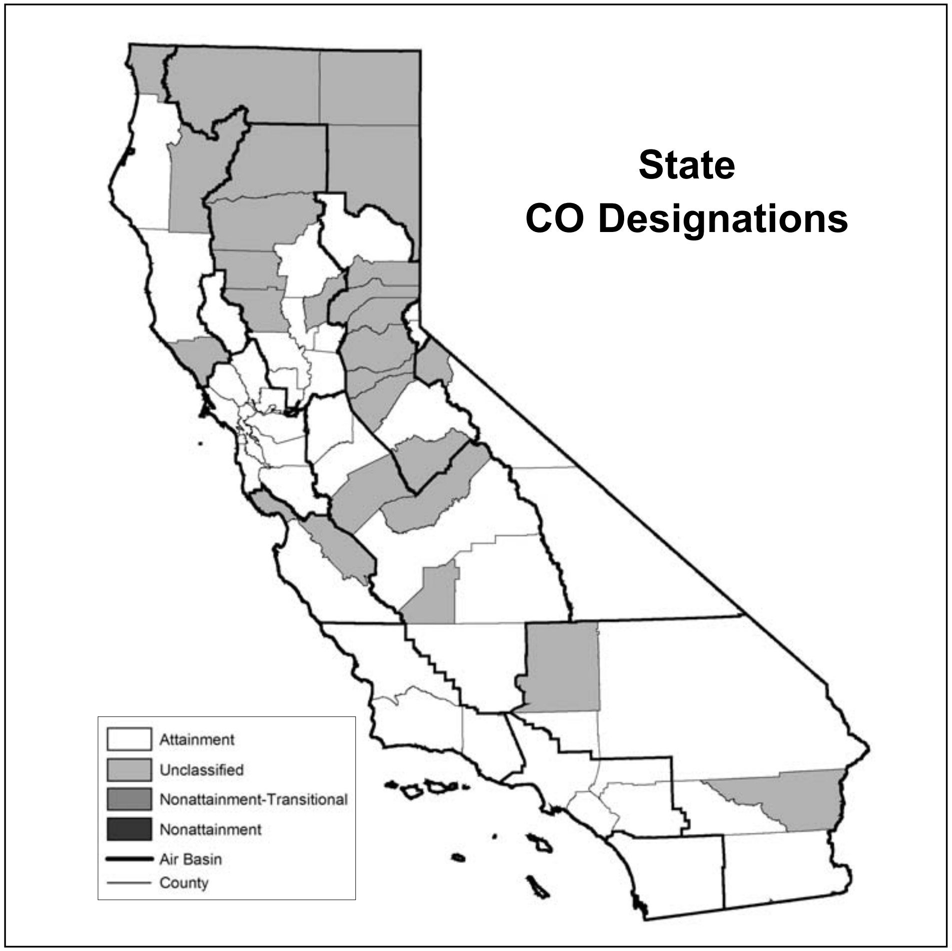

Figure 1-11

Carbon Monoxide - National Area Designations

The U.S. EPA uses only two designation categories for CO: attainment/unclassified and nonattainment. All areas of California are currently designated as attainment/unclassified for the national CO standards. The South Coast Air Basin was the final area to meet the requirements for attainment, and the U.S. EPA redesignated the South Coast as attainment effective June 11, 2007.

Another area of accomplishment is the City of Calexico, in Imperial County, which now meets the national standards. This area does occasionally exceed the national standards, however this area remains unclassified with respect to the national CO standards. There is a high likelihood that cross-border traffic contributes to the local CO problem in this area, and more study is needed to determine the most effective control strategy.

Most CO is directly emitted by cars and trucks, and the ARB's motor vehicle controls should be sufficient to continue controlling the problem in the coming years.

Figure 1-12

Toxic Air Contaminants

A toxic air contaminant or TAC is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

The ARB's TAC program traces its beginning to the criteria pollutant program in the 1960s. For many years, the criteria pollutant control program has been effective at reducing TACs since many volatile organic compounds and PM constituents are also TACs. During the 1980s, the public's concern over toxic chemicals heightened. As a result, citizens demanded protection and control over the release of toxic chemicals into the air. In response to public concerns, the California legislature enacted a 1983 law governing the release of TACs into the air. This law charges the ARB with the responsibility for identifying substances as TACs, setting priorities for control, adopting control strategies, and promoting alternative processes. The ARB has designated almost 200 compounds as TACs. Additionally, the ARB has implemented control strategies for a number of compounds that pose high health risk and show potential for effective control.

The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). In addition to diesel PM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions will vary depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. Details on the method and the resulting estimates for individual air basins can be found in the ARB report entitled: *"Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant -- Appendix III Part A Exposure Assessment,"* (April 1998). Currently, the diesel PM estimates are being reviewed to reflect control measures that were outlined in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (October 2000).

Chapter 5 and Appendix C include information for ten TACs: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. These ten compounds pose the greatest known ambient risk based on air quality data, or concentration estimates in the case of diesel PM. The data are summarized for the State as a whole, for each of the five major air basins, and for each individual site within these air basins. Chapter 5 also discusses dioxins, based on available data. Note that other TACs may pose significant health risks, but sufficient air quality data are unavailable for these compounds.

Most of the TAC data in this almanac were obtained from monitors operated by the ARB. The majority of the information is presented on a pollutant-by-pollutant basis, with a focus on cancer risk. The available data represent average population exposures and may not represent the health risk near local sources. Localized impacts may involve exposure to different TACs or to higher or lower concentrations than those represented by the ambient monitoring data. ARB participated in several studies to address localized impacts and community health issues to learn which communities are the most impacted and who in those communities are the most vulnerable. More information on these studies is available on the web at *www.arb.ca.gov/ch/ch.htm*.

Since Statewide TAC monitoring started in 1989, the ARB has substantially increased its knowledge about TACs, and the data indicate that control efforts have been effective in reducing public exposures and associated health risks. The future gradual phase-in of control strategies will likely continue to result in lower exposures for California's citizens. In the interim, work continues on identifying toxic substances and developing a better understanding of the risks they pose. Health experts still have only a limited knowledge of the mechanisms by which many toxic substances harm the body, and there is still much work to be done in researching health effects and quantifying cancer risks. Cooperative strategies between the ARB, businesses, and other State, local, and federal agencies will be a major focus of future control efforts.

Additional information on TACs may be found on the ARB website at *www.arb.ca.gov/toxics/toxics.htm*. Detailed information on the health effects of these pollutants, as well as many other TACs, can be found in a report entitled: *"Toxic Air Contaminant Identification List-Summaries."* This report, dated September 1997, is available from the ARB Public Information Office and on the web at *www.arb.ca.gov/toxics/tac/intro.htm.*

Figure 1-13

Climate Change

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases, commonly reffered to as "greenhouse gases", into the atmosphere. The greenhouse gases (GHG) include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons. Climate research has identified other greenhouse agents that can drive climate change, particularly tropospheric ozone and atmospheric aerosols (particles containing sulfate, black carbon or other carbonaceous compounds).

Greenhouse gases absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19^{th} century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years, and it appears that the decade of the 1990s was the warmest in human history.

It is a fact that human activities have increased the atmospheric abundance of greenhouse gases. There are uncertainties as to exactly what the climate changes will be in various local areas, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy. Already, some of these effects have been seen in California.

The United States has the highest emissions of greenhouse gases of any nation on Earth. California's transportation sector is the single largest contributor of GHGs in the State. In the absence of controls, the State's inventory of greenhouse gases would mirror the growth in population. Transportation and land use trends in California would continue to increase greenhouse gas production.

California has been studying the impacts of climate change since 1988, when the legislature approved AB 4420. This legislation directed the California Energy Commission (CEC), in consultation with the ARB and other agencies, to study the implications of global warming on California's environment, economy, and water supply. The CEC was also directed to prepare and maintain the State's inventory of GHG emissions. More information on the CEC's climate change activities can be found on the web at *www.energy.ca.gov/global_climate_change*.

In 2002, recognizing that global warming would impact California, the legislature approved AB 1493. This bill directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. ARB staff's proposal implementing these regulations was approved by the ARB in September 2004. These regulations will be reviewed and may be modified by the California Legislature. More information on ARB's Climate Change regulations can be found on the web at *www.arb.ca.gov/cc/cc.htm*.

AB 1803 was approved in 2006. This bill directed the ARB to prepare, adopt and update the greenhouse gas emission inventory formerly required to be adopted and updated by the CEC. Also approved was the California Global Warming Solutions Act of 2006 (AB 32). Among the several new responsibilities for ARB is the requirement to establish the 1990 GHG emissions level as a limit to be achieved by 2020. More information on ARB's greenhouse gas inventory can be found on the web at *www.arb.ca.gov/cc/ccei/ccei.htm*.

California Air Quality Regulation

The responsibility for controlling air pollution in California is shared between 35 local air districts, the ARB, and the U.S. EPA. The basic responsibilities of each of these entities are outlined below.

District Responsibilities:

- Control and permit industrial pollution sources (such as power plants, refineries, and manufacturing operations) and widespread area-wide sources (such as bakeries, dry cleaners, service stations, and commercial paint applicators).
- Adopt local air quality plans and rules.

Air Resources Board Responsibilities:

- Establish State ambient air quality standards.
- Adopt and enforce emission standards for mobile sources (except where federal law preempts ARB's authority), fuels, consumer products, and TACs.
- Provide technical support to the local districts.
- Oversee local district compliance with State and federal law.
- Approve local air quality plans and submit SIPs to U.S. EPA.

United States Environmental Protection Agency Responsibilities:

- Establish national ambient air quality standards.
- Set emission standards for mobile sources, including those sources under exclusive federal jurisdiction (like interstate trucks, aircraft, marine vessels, locomotives, and farm/construction equipment).
- Oversee State air programs as they relate to the Federal Clean Air Act.
- Approve SIPs.

List of Air Pollution Contacts

Amador County Air Pollution Control District
All of Amador County
(209) 257-0112
www.amadorapcd.org

Antelope Valley Air Quality Management District
Northeast portion of Los Angeles County
(661) 723-8070
www.avaqmd.ca.gov

Bay Area Air Quality Management District
All of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, western portion of Solano County, and southern portion of Sonoma County
(415) 749-5000
www.baaqmd.gov

Butte County Air Quality Management District
All of Butte County
(530) 891-2882
www.bcaqmd.org

Calaveras County Air Pollution Control District
All of Calaveras County
(209) 754-6504
www.co.calaveras.ca.us/departments/env.asp

Colusa County Air Pollution Control District
All of Colusa County
(530) 458-0590
www.colusanet.com/apcd

El Dorado County Air Quality Management District
All of El Dorado County
(530) 621-6662
www.co.el-dorado.ca.us/emd/apcd

Feather River Air Quality Management District
All of Sutter and Yuba counties
(530) 634-7659
www.fraqmd.org

Glenn County Air Pollution Control District
All of Glenn County
(530) 934-6500
www.countyofglenn.net/air_pollution_control

Great Basin Unified Air Pollution Control District
All of Alpine, Inyo, and Mono counties
(760) 872-8211
www.gbuapcd.org

Imperial County Air Pollution Control District
All of Imperial County
(760) 482-4606
www.imperialcounty.net

Kern County Air Pollution Control District
Eastern portion of Kern County
(661) 862-5250
www.kernair.org

Lake County Air Quality Management District
All of Lake County
(707) 263-7000
www.lcaqmd.net

Lassen County Air Pollution Control District
All of Lassen County
(530) 251-8110
lassenag@psln.com

Mariposa County Air Pollution Control District
All of Mariposa County
(209) 966-2220
www.mariposacounty.org/healthdepartment

Mendocino County Air Quality Management District
All of Mendocino County
(707) 463-4354
www.co.mendocino.ca.us/aqmd

Modoc County Air Pollution Control District
All of Modoc County
(530) 233-6419
apcd@modoccounty.us

Mojave Desert Air Quality Management District
Northern portion of San Bernardino County and eastern portion of Riverside County
(760) 245-1661
www.mdaqmd.ca.gov

Monterey Bay Unified Air Pollution Control District
All of Monterey, San Benito and Santa Cruz counties
(831) 647-9411
www.mbuapcd.org

North Coast Unified Air Quality Management District
All of Del Norte, Humboldt, and Trinity counties
(707) 443-3093
www.ncuaqmd.org

Northern Sierra Air Quality Management District
All of Nevada, Plumas, and Sierra counties
(530) 274-9360
www.myairdistrict.com

No. Sonoma County Air Pollution Control District
Northern portion of Sonoma County
(707) 433-5911
nsc@sonic.net

Placer County Air Pollution Control District
All of Placer County
(530) 745-2330
www.placer.ca.gov/air.aspx

Sacramento Metro Air Quality Management District
All of Sacramento County
(916) 874-4800
www.airquality.org **or** *www.sparetheair.com*

San Diego County Air Pollution Control District
All of San Diego County
(858) 586-2600
www.sdapcd.org

San Joaquin Valley Air Pollution Control District
All of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and western portion of Kern County
(559) 230-6000
www.valleyair.org

San Luis Obispo County Air Pollution Control District
All of San Luis Obispo County
(805) 781-5912
www.slocleanair.org

Santa Barbara County Air Pollution Control District
All of Santa Barbara County
(805) 961-8800
www.sbcapcd.org

Shasta County Air Quality Management District
All of Shasta County
(530) 225-5674
www.co.shasta.ca.us/Departments/Resourcemgmt/drm/aqmain.htm

Siskiyou County Air Pollution Control District
All of Siskiyou County
(530) 841-4029
www.co.siskiyou.ca.us/agcomm/airpollution.htm

South Coast Air Quality Management District
Los Angeles County except for portion covered by Antelope Valley APCD, all of Orange County, western portion of San Bernardino County, and western and central portions of Riverside County
(909) 396-2000
www.aqmd.gov

Tehama County Air Pollution Control District
All of Tehama County
(530) 527-3717
www.tehcoapcd.net

Tuolumne County Air Pollution Control District
All of Tuolumne County
(209) 533-5693
www.tuolumnecounty.ca.gov

Ventura County Air Pollution Control District
All of Ventura County
(805) 645-1400
www.vcapcd.org

Yolo-Solano Air Quality Management District
All of Yolo County and eastern portion of Solano County
(530) 757-3650
www.ysaqmd.org

Milestones in California's Emission Control Programs

Historical Milestones:

1963: First vehicle emission control in the country – positive crankcase ventilation required to reduce evaporative emissions.

1966: First tailpipe emission standards for hydrocarbons (HC) and carbon monoxide (CO).

1971: First oxides of nitrogen (NO_x) standards for cars and light trucks.

1973: First heavy-duty diesel truck standards.

1975: Two-way catalytic converters first used to control HC and emissions from cars.

1976: "Unleaded" gasoline first offered for sale, with reduced lead levels.

Three-way catalyst first used to control NO_x, HC, and CO emissions from cars.

1984: California Smog Check program implemented to identify and repair ineffective emission control systems on cars and light-trucks.

1988: California Clean Air Act enacted, setting forth the framework for meeting State ambient air quality standards.

1992: California's reformulated gasoline introduced – reducing evaporative emissions, phasing out lead in gasoline, and requiring wintertime oxygenates to reduce CO formation.

First consumer product regulations take effect, regulating HC emissions from aerosol antiperspirants and deodorants.

1993: Cleaner diesel fuel launched, reducing emissions of diesel PM, sulfur dioxide, and NO_x.

Regulations to limit HC emissions from consumer products such as hairspray, windshield washer fluid, and air fresheners take effect.

1994: Low emission vehicle regulations to further reduce emissions from cars and light trucks take effect.

1996: Cleaner burning gasoline debuts with emission benefits equivalent to removing 3.5 million cars from California roads.

Regulations reducing HC emissions from spray paint take effect.

1998: Tighter standards for California diesel trucks and buses take effect.

Revamped Smog Check II program implemented.

1999: ARB acts to phaseout MTBE in gasoline.

2000: Tighter emission standards for off-road diesel equipment, such as tractors and generators, take effect nationwide.

More stringent California standards for the small engines used in lawn and garden equipment take effect.

ARB enacts Diesel Risk Reduction Plan.

2001: First California standards for large spark ignition off-road engines such as forklifts and pumps take effect.

More stringent standards for pleasure boats and personal watercraft sold in California begin.

Limits on HC emissions from products such as carpet and upholstery cleaners take effect.

2002: Emission standards for new heavy-duty diesel trucks are cut in half, nationwide.

2003: New emission standards for inboard marine engines sold in California take effect.

2004: Regulations to further reduce emissions from cars (and require light-trucks and sport-utility vehicles to meet the same emission standards as cars) take effect in California.

MTBE in California gasoline is fully phased out.

Tighter standards for on-road motorcycles begin.

2005: Limits on HC emissions from paint removers take effect.

2006: Low sulfur diesel fuel required nationwide.

Regulations requiring cleaner fuels in locomotives take effect.

Goods Movement emission reduction plan adopted.

Upcoming Milestones:

2007: Tighter emission standards for heavy-duty diesel trucks take effect nationwide.

Regulations requiring cleaner fuels in ship auxiliary engines and cleaner port-side equipment take effect.

2009: Greenhouse gas emission standards for passenger cars and light trucks.

2011: Tighter emission standards for off-road diesel equipment.

Web Resources (www.arb.ca.gov/californiaalmanac)

Much of the information used to develop the Almanac is accessible through a variety of databases and tools available on the ARB website at *www.arb.ca.gov/californiaalmanac*.

Data

Real-time Air Quality Data - Air Quality and Meteorological Information System (AQMIS2) - Allows access to near real-time air quality and meteorological data. These data are available in tabular summary reports.

Historical Air Quality Data - Aerometric Data Analysis and Management System (iADAM) - Allows access to historical data (data for record) in tabular summary reports or displayed as graphs.

Emission Inventory Data - Allows access to historical and projected emissions, vehicle activity, and human population. Data are available for 2006, as well as for the years 1975-2020 at five year intervals.

Facility Search Engine - Allows users to locate criteria or toxics emissions data for a specific facility.

Top 25 Source Categories - Provides users with emissions for the top 25 highest emitting source categories by geographic area.

Community Level Emissions - Community Health Air Pollution Information System (CHAPIS) - Allows users to query and view emissions using a map interface.

Toxics Emission Factors - California Air Toxics Emission Factor database (CATEF) - Provides over 2000 emission factors to estimate toxic air emissions for specific industrial processes or emissions.

Information

Area Designations - Provides information regarding the designation of areas in California with respect to the State ambient air quality standards.

Air Quality Standards - Provides information on State and national air quality standards.

Central California Air Quality Studies (CCAQS) - Comprises two studies with the goal of providing an improved understanding of PM and visibility in central California.

Climate Change - Information regarding ARB's Climate Change Program.

Goods Movement Plan (GMP) - Presentation materials and policy information on California's Goods Movement Plan.

Community Health - Provides information on Community Health progams in place.

Air Quality Data Monitoring Sites - Air monitoring web site with access to the most recent quality assurance information on any particular air monitoring site. This information consists of pollutants monitored, location, operation information, and photos of the site, if available.

Transport - Information on the movement of ozone and ozone precursors between basins or regions and established mitigation requirements.

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Chapter 2

Current Emissions and Air Quality -- Criteria Pollutants

Introduction

This chapter provides statewide information on current emissions and air quality, relative to the State and national ambient air quality standards (see Chapter 5 for information on toxic air contaminants). This section gives a national perspective on how California's air quality compares with that in other areas of the nation. The second section of this chapter includes a summary table of the statewide emission inventory. It should be noted that emission inventories are developed for many purposes, including SIPs, Goods Movement activities, and for other planning and regulatory needs. For this edition of the Almanac, the current emissions data represent a calendar year 2006 snapshot that was developed by growing the 2004 inventory to 2006 and by updating the mobile source estimates using the EMFAC2007 and OFFROAD2007 models.

The summary table shows emission data by three major source categories: stationary sources, area-wide sources, and mobile sources. Emission data for natural sources are provided in Appendix E. The remaining sections of this Chapter provide information on emissions (including the high emitting facilities) and air quality on a statewide basis. This information is organized by pollutant, for ozone (and ozone precursor emissions), PM_{10}, $PM_{2.5}$, CO, and ammonia (NH_3).

Emissions are reported as annual averages, in tons per day. For most sources and pollutants that are not seasonal, this describes emissions very well. However, for some pollutants such as PM_{10} and $PM_{2.5}$, annual averages do not give an accurate indication of the seasonal nature of emissions. Therefore, they may appear to be artificially low. Many sources of PM_{10} and $PM_{2.5}$ are seasonal, including wildfires, agricultural processes, residential wood combustion, or dust storms in the Owens Valley and Mono Lake areas. Many sources of PM_{10} and $PM_{2.5}$ can also be very localized, and basinwide annual averages do not give any information about these sources.

State and local agencies have implemented many control measures during the last three decades to improve air quality. As a result, there has been a steady decline in both emissions and pollutant concentrations. However, two pollutants, ozone and PM, still pose air quality problems. With the City of Calexico in Imperial County now attaining both the national and State CO standards, the entire state is in attainment for CO. Although progress continues to be made, it is still a challenge to reduce emissions sufficiently to attain State andnational ozone and PM standards statewide.

Figure 2-1 shows the national 8-hour ozone design values for the top 15 urban areas in the nation, based on data for 2003 to 2005. The design values in all these areas exceed the national 8-hour standard

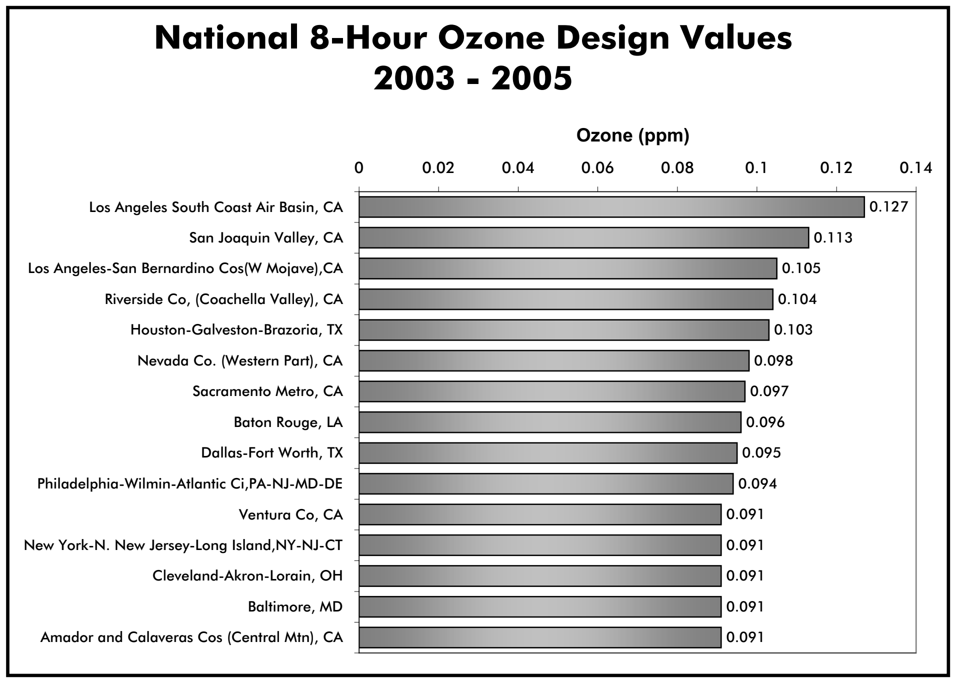

Figure 2-1

of 0.08 ppm. Eight of the top 15 areas are located in California, with the South Coast Air Basin and San Joaquin Valley areas ranking first and second. This table indicates the severity of the ozone air quality problem in California.

In contrast, the $PM_{2.5}$ problem is prevalent in both the eastern United States and in California. Figure 2-2 shows the top $PM_{2.5}$ areas in the nation and their design values for 2003 to 2005. California has two areas that rank in the top 15 in the nation. Values in California's two areas continue to be significantly above the level of the standard. Although, significant progress has being made, because of the nature of the PM problem, it will be many years before the standards are attained.

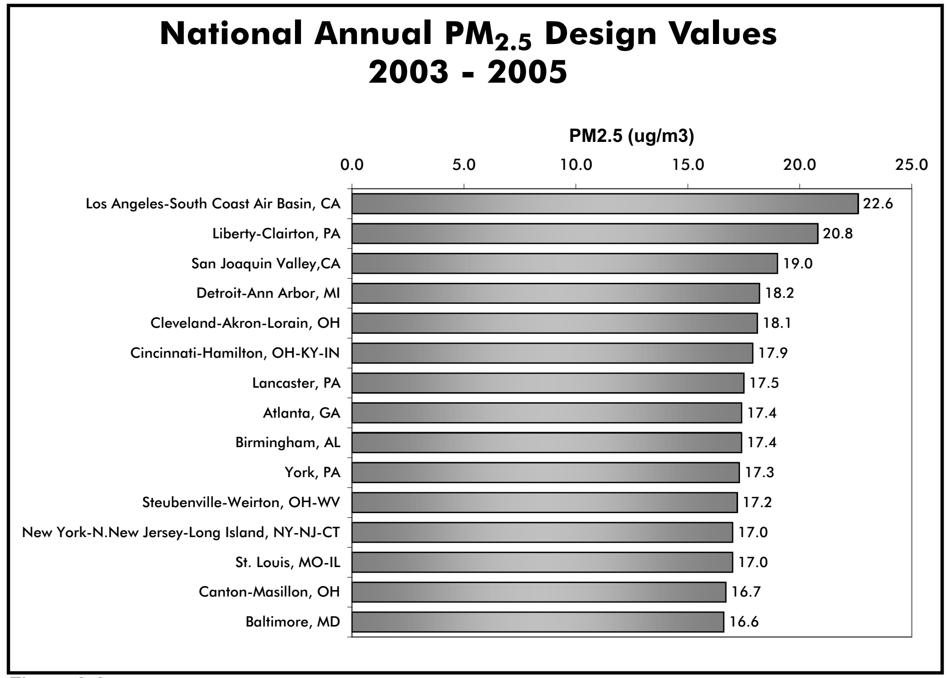

Figure 2-2

2006 Statewide Emission Inventory Summary

Division / Major Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
	Emissions (tons/day, annual average)						
Stationary Sources	**381**	**346**	**380**	**114**	**136**	**83**	**78**
Fuel Combustion	28	274	286	42	34	32	10
Waste Disposal	18	2	3	1	1	1	50
Cleaning And Surface Coatings	142	1	0	0	1	1	0
Petroleum Production And Marketing	134	14	9	43	3	2	1
Industrial Processes	59	56	81	29	97	47	16
Area-Wide Sources	**658**	**1974**	**98**	**6**	**1777**	**450**	**599**
Solvent Evaporation	413	0	0	0	0	0	35
Miscellaneous Processes	246	1974	98	6	1777	450	564
Mobile Sources	**1282**	**10136**	**3081**	**184**	**173**	**146**	**61**
Light Duty Passenger Vehicles	283	2658	229	2	16	9	29
Light and Medium Duty Trucks	262	2972	352	2	19	12	30
Heavy Duty Trucks	143	984	1190	9	49	43	2
Other On-Road	55	575	77	0	2	1	0
Aircraft and Trains	46	300	201	11	13	13	-
Ships and Commercial Boats	15	45	327	153	25	24	-
Recreational Boats and Vehicles	209	925	38	1	9	7	-
Off-Road Equipment	210	1559	551	4	33	30	-
Other Off-Road	58	117	116	1	7	7	0
Total Statewide - All Sources **	***2322***	***12456***	***3558***	***305***	***2086***	***680***	***738***

* Includes directly emitted particulate matter only.
** Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM_{10}.
Table 2-1

2006 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
Stationary Sources (division total)	**381**	**346**	**380**	**114**	**136**	**83**	**78**
Fuel Combustion (major category total)	28	274	286	42	34	32	10
- Electric Utilities	3	49	26	3	6	6	4
- Cogeneration	4	44	23	1	4	4	1
- Oil And Gas Production (Combustion)	4	19	20	2	2	2	0
- Petroleum Refining (Combustion)	3	14	24	16	3	3	1
- Manufacturing And Industrial	4	56	90	14	6	6	3
- Food And Agricultural Processing	5	52	34	3	3	3	0
- Service And Commercial	5	32	50	3	5	5	0
- Other (Fuel Combustion)	2	8	18	1	5	4	0
Waste Disposal (major category total)	18	2	3	1	1	1	50
- Sewage Treatment	1	0	0	0	0	0	2
- Landfills	8	1	1	0	1	0	11
- Incinerators	0	1	1	0	0	0	0
- Soil Remediation	1	0	0	-	0	0	0
- Other (Waste Disposal)	8	0	0	-	0	0	37
Cleaning And Surface Coatings (major category total)	142	1	0	0	1	1	0
- Laundering	1	0	0	-	-	-	-
- Degreasing	32	-	-	-	0	0	0
- Coatings And Related Process Solvents (sub-category total)	66	0	0	0	1	1	0
- Auto Marine, & Aircraft	*24*	*0*	*0*	*0*	*0*	*0*	*0*
- Paper & Fabric	*3*	*0*	*0*	*0*	*0*	*0*	*0*
- Metal, Wood, & Plastic	*24*	*0*	*0*	*0*	*0*	*0*	*0*
- Other	*15*	*0*	*0*	*0*	*1*	*1*	*0*

* Includes directly emitted particulate matter only.

Table 2-2

2006 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
	Emissions (tons/day, annual average)						
Stationary Sources (division total) *(continued)*							
Cleaning And Surface Coatings (major category) *(continued)*							
- Printing	17	0	0	-	0	0	0
- Adhesives And Sealants	20	-	-	-	0	-	-
- Other (Cleaning And Surface Coatings)	5	0	0	0	0	0	0
Petroleum Production And Marketing (major category total)	134	14	9	43	3	2	1
- Oil And Gas Production	43	1	3	0	0	0	0
- Petroleum Refining	14	12	6	43	3	2	1
- Petroleum Marketing (sub-category total)	77	0	0	-	0	0	-
- Fuel Distribution Losses	*4*	*0*	*0*	*0*	*0*	*0*	*0*
- Fuel Storage Losses	*2*	*0*	*0*	*0*	*0*	*0*	*0*
- Vehicle Refueling	*38*	*0*	*0*	*0*	*0*	*0*	*0*
- Other	*33*	*0*	*0*	*0*	*0*	*0*	*0*
- Other (Petroleum Production And Marketing)	0	-	-	-	-	-	0
Industrial Processes (major category total)	59	56	81	29	97	47	16
- Chemical	22	1	1	4	4	4	0
- Food And Agriculture	19	2	9	1	15	7	0
- Mineral Processes	5	41	54	20	53	20	1
- Metal Processes	1	1	1	0	1	1	-
- Wood And Paper	3	1	2	0	13	8	-
- Glass And Related Products	0	1	9	3	2	1	1
- Electronics	1	-	-	-	0	0	-
- Other (Industrial Processes)	9	8	5	1	10	6	14

* Includes directly emitted particulate matter only.

Table 2-2 (continued)

2006 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
	Emissions (tons/day, annual average)						
Area-Wide Sources (division total)	**658**	**1974**	**98**	**6**	**1777**	**450**	**599**
Solvent Evaporation (major category total)	413	0	0	0	0	0	35
- Consumer Products	236	-	-	-	-	-	-
- Architectural Coatings And Related Process Solvent (sub-category total)	92	-	-	-	-	-	-
- Architectural Coating	*76*	*0*	*0*	*0*	*0*	*0*	*0*
- Thinning & Cleanup Solvents	*16*	*0*	*0*	*0*	*0*	*0*	*0*
- Pesticides/Fertilizers (sub-category total)	53	-	-	-	-	-	35
- Farm Use	*51*	*0*	*0*	*0*	*0*	*0*	*0*
- Commercial Use	*2*	*0*	*0*	*0*	*0*	*0*	*0*
- Asphalt Paving / Roofing	32	-	-	-	0	0	-
- Other (Solvent Evaporation)	-	-	-	-	-	-	-
Miscellaneous Processes (major category total)	246	1974	98	6	1777	450	564
- Residential Fuel Combustion (sub-category total)	54	791	71	4	114	110	6
- Wood Combustion	*50*	*763*	*10*	*1*	*108*	*104*	*6*
- Cooking And Space Heating	*3*	*25*	*52*	*2*	*5*	*5*	*0*
- Other	*0*	*4*	*10*	*0*	*1*	*1*	*0*
- Farming Operations (sub-category total)	116	-	-	-	161	40	495
- Tilling,Harvesting, & Growing	*0*	*0*	*0*	*0*	*126*	*19*	*0*
- Livestock	*116*	*0*	*0*	*0*	*34*	*21*	*495*

* Includes directly emitted particulate matter only.

Table 2-2 (continued)

2006 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
Area-Wide Sources (division total) ***(continued)***							
Miscellaneous Processes (major category) *(continued)*							
- Construction And Demolition (sub-category total)	-	-	-	-	205	20	-
- Building	*0*	*0*	*0*	*0*	*116*	*12*	*0*
- Road Construction Dust	*0*	*0*	*0*	*0*	*89*	*9*	*0*
- Paved Road Dust	-	-	-	-	392	59	-
- Unpaved Road Dust	-	-	-	-	479	52	-
- Fugitive Windblown Dust (sub-category total)	-	-	-	-	286	45	-
- Farm Lands	*0*	*0*	*0*	*0*	*160*	*28*	*0*
- Pasture Lands	*0*	*0*	*0*	*0*	*13*	*2*	*0*
- Unpaved Roads	*0*	*0*	*0*	*0*	*113*	*15*	*0*
- Fires	1	10	0	-	1	1	-
- Managed Burning And Disposal (sub-category total)	68	1171	26	2	109	100	4
*- Agricultural Burning***	*23*	*245*	*14*	*1*	*30*	*28*	*3*
- Non-Agricultural Burning	*40*	*881*	*10*	*1*	*73*	*65*	*1*
- Other	*5*	*46*	*1*	*0*	*7*	*7*	*0*
- Cooking	7	0	-	-	30	23	-
- Other (Miscellaneous Processes)	0	2	0	-	1	1	60

* Includes directly emitted particulate matter only.

** Agricultural burning includes the prescribed burning of prunings and field crops. Non-agricultural burning includes prescribed burning activities associated with range improvement, forest management, wildland fire use, and weed abatement.

Table 2-2 (continued)

2006 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
Mobile Sources (division total)	**1282**	**10136**	**3081**	**184**	**173**	**146**	**61**
On-Road Motor Vehicles (major category total)	743	7189	1849	14	85	66	61
- Light Duty Passenger (sub-category total)	283	2658	229	2	16	9	29
- Non-Evaporative	*154*	*2657*	*227*	*2*	*16*	*9*	*29*
- Evaporative	*129*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*1*	*2*	*0*	*0*	*0*	*0*
- Light Duty Trucks(<3750 lbs.) (sub-category total)	90	939	85	1	4	2	6
- Non-Evaporative	*52*	*935*	*76*	*0*	*4*	*2*	*6*
- Evaporative	*38*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*4*	*9*	*0*	*0*	*0*	*0*
- Light Duty Trucks (>3750 lbs) (sub-category total)	117	1347	173	1	10	7	13
- Non-Evaporative	*67*	*1346*	*172*	*1*	*10*	*7*	*13*
- Evaporative	*51*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*0*	*1*	*0*	*0*	*0*	*0*
- Medium Duty Trucks (sub-category total)	55	687	94	1	5	3	10
- Non-Evaporative	*37*	*687*	*93*	*1*	*5*	*3*	*10*
- Evaporative	*18*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*0*	*1*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (<10000 lbs) (sub-category total)	31	268	38	0	1	0	2
- Non-Evaporative	*20*	*268*	*38*	*0*	*1*	*0*	*2*
- Evaporative	*11*	*0*	*0*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (>10000 lbs) (sub-category total)	10	81	10	0	0	0	0
- Non-Evaporative	*6*	*81*	*10*	*0*	*0*	*0*	*0*
- Evaporative	*4*	*0*	*0*	*0*	*0*	*0*	*0*
- Medium Heavy Duty Gas Trucks (sub-category total)	20	178	18	0	0	0	0
- Non-Evaporative	*15*	*178*	*18*	*0*	*0*	*0*	*0*
- Evaporative	*5*	*0*	*0*	*0*	*0*	*0*	*0*

* Includes directly emitted particulate matter only.

Table 2-2 (continued)

2006 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
Mobile Sources (division total) *(continued)*							
On-Road Motor Vehicles (major category) *(continued)*							
- Heavy Heavy Duty Gas Trucks (sub-category total)	11	158	22	0	0	0	0
- Non-Evaporative	*10*	*158*	*22*	*0*	*0*	*0*	*0*
- Evaporative	*1*	*0*	*0*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (<10000 lbs)	1	6	35	0	0	0	0
- Light Heavy Duty Gas Trucks (>10000 lbs)	1	4	26	0	0	0	0
- Medium Heavy Duty Diesel Trucks	3	30	159	2	5	4	0
- Heavy Heavy Duty Diesel Trucks	66	260	883	7	43	38	0
- Motorcycles (Mcy) (sub-category total)	47	441	11	-	0	0	0
- Non-Evaporative	*35*	*441*	*11*	*0*	*0*	*0*	*0*
- Evaporative	*11*	*0*	*0*	*0*	*0*	*0*	*0*
- Heavy Duty Diesel Urban Buses	1	6	29	0	1	0	0
- Heavy Duty Gas Urban Buses (sub-category total)	1	11	2	0	0	0	0
- Non-Evaporative	*1*	*11*	*2*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- School Buses (sub-category total)	1	14	14	0	1	0	0
- Non-Evaporative	*1*	*11*	*1*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*3*	*13*	*0*	*1*	*0*	*0*
- Other Buses (sub-category total)	2	22	10	0	0	0	0
- Non-Evaporative	*1*	*21*	*3*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*1*	*7*	*0*	*0*	*0*	*0*
- Motor Homes (sub-category total)	3	81	11	0	0	0	0
- Non-Evaporative	*3*	*81*	*7*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*0*	*4*	*0*	*0*	*0*	*0*

* Includes directly emitted particulate matter only.

Table 2-2 (continued)

2006 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3
Mobile Sources (division total) *(continued)*							
Other Mobile Sources (major category total)	539	2946	1232	170	88	81	0
- Aircraft	34	266	53	3	9	9	-
- Trains	12	34	149	8	5	4	-
- Ships And Commercial Boats	15	45	327	153	25	24	-
- Residual Oil	*6*	*18*	*230*	*147*	*20*	*19*	*0*
- Diesel	*6*	*16*	*70*	*2*	*3*	*3*	*0*
- Gasoline	*0*	*3*	*0*	*0*	*0*	*0*	*0*
- Other Fuel	*2*	*8*	*26*	*5*	*2*	*2*	*0*
- Recreational Boats	143	741	35	0	8	6	-
- Non-Evaporative	*102*	*740*	*33*	*0*	*8*	*6*	*0*
- Evaporative	*40*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*1*	*1*	*2*	*0*	*0*	*0*	*0*
- Off-Road Recreational Vehicles (sub-category total)	66	184	2	1	1	1	-
- All-Terrain Vehicles	*16*	*47*	*0*	*1*	*0*	*0*	*0*
- Motorcycles	*39*	*62*	*0*	*0*	*0*	*0*	*0*
- Snowmobiles	*8*	*21*	*0*	*0*	*0*	*0*	*0*
- Golf Carts, Specialty Carts & Minibikes	*4*	*54*	*0*	*1*	*0*	*0*	*0*
- Off-Road Equipment (sub-category total)	210	1559	551	4	33	30	-
- Lawn And Garden Equipment	*96*	*565*	*15*	*0*	*2*	*1*	*0*
- Non-Evaporative	*50*	*562*	*8*	*0*	*1*	*1*	*0*
- Evaporative	*45*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*1*	*3*	*6*	*0*	*0*	*0*	*0*
- Commercial & Industrial Equipment	*114*	*993*	*536*	*4*	*31*	*29*	*0*
- Non-Evaporative	*28*	*653*	*30*	*0*	*2*	*2*	*0*
- Evaporative	*13*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*72*	*251*	*485*	*4*	*29*	*27*	*0*
- Natural Gas	*1*	*89*	*22*	*0*	*0*	*0*	*0*
- Farm Equipment (sub-category total)	24	117	116	1	7	7	-
- Non-Evaporative	*2*	*65*	*2*	*0*	*0*	*0*	*0*
- Evaporative	*3*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*18*	*53*	*114*	*1*	*7*	*6*	*0*
- Fuel Storage and Handling	34	-	-	-	-	-	-
Total Statewide - All Sources*	***2322***	***12456***	***3558***	***305***	***2086***	***680***	***738***

* Includes directly emitted particulate matter only.

** Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM_{10}.

Table 2-2 (continued)

Ozone
2006 Statewide Emission Inventory - Ozone Precursors by Category

NO_x Sources - Statewide

NO_x is a group of gaseous compounds of nitrogen and oxygen, many of which contribute to the formation of ozone, PM_{10}, and $PM_{2.5}$. Most NO_x emissions are produced by the combustion of fuels. Industrial sources report NO_x emissions to local air districts and to the ARB. Other sources of NO_x emissions are estimated by the local air districts and the ARB. Mobile sources (including on-road and other) make up about 87 percent of the total statewide NO_x emissions. Area-wide sources, which include residential fuel combustion and managed burning and disposal, contribute only a small portion of the total NO_x emissions.

ROG Sources - Statewide

ROG are VOCs that are photochemically reactive and contribute to the formation of ozone, as well as PM_{10} and $PM_{2.5}$. These emissions result primarily from incomplete fuel combustion and the evaporation of chemical solvents and fuels. On-road mobile sources are the largest contributors to statewide ROG emissions. Stationary sources of ROG emissions include processes that use solvents (such as dry cleaning, degreasing, and coating operations) and petroleum-related processes (such as petroleum refining and marketing and oil and gas extraction). Area-wide ROG sources include consumer products, pesticides, aerosol and architectural coatings, asphalt paving and roofing, farming operations, and other evaporative emissions.

NO_X Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	380	11%
Area-wide Sources	98	3%
On-Road Mobile	1849	52%
Gasoline Vehicles	740	21%
Diesel Vehicles	1108	31%
Other Mobile	1232	35%
Gasoline Vehicles	306	9%
Diesel Vehicles	826	23%
Other	101	3%
Total Statewide	***3558***	***100%***

Table 2-3

ROG Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	381	16%
Area-wide Sources	658	28%
On-Road Mobile	743	32%
Gasoline Vehicles	672	29%
Diesel Vehicles	71	3%
Other Mobile	539	23%
Gasoline Vehicles	391	17%
Diesel Vehicles	111	5%
Other	37	2%
Total Statewide	***2322***	***100%***

Table 2-4

Largest Stationary Sources Statewide

Largest Stationary Sources of NO_x Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Cemex - Black Mountain Quarry	Apple Valley	4754
Mojave Desert	TXI Riverside Cement Company	Oro Grande	4111
Mojave Desert	California Portland Cement	Mojave	2975
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	2770
Mojave Desert	Searles Valley Minerals	Trona	2001
San Francisco Bay Area	Valero Refining Company	Benicia	1963
San Francisco Bay Area	Shell Martinez Refinery	Martinez	1782
San Francisco Bay Area	Tesoro Refining And Marketing	Martinez	1511
Mojave Desert	National Cement	Lebec	1300
Mojave Desert	PG&E Topock Compressor Station	Needles	1140

Table 2-5

Largest Stationary Sources of ROG Statewide

Air Basin	Facility Name	City	Tons/Year
San Francisco Bay Area	Tesoro Refining And Marketing	Martinez	1555
San Francisco Bay Area	Chevron Products Company	Richmond	1311
San Francisco Bay Area	Shell Martinez Refinery	Martinez	1235
San Joaquin Valley	Pactiv Corporation (Packaging)	Visalia	828
South Coast	ChevronTexaco Products	El Segundo	775
South Coast	BP West Coast Products Carson Refinery	Carson	745
South Coast	ExxonMobil Oil Corporation	Torrance	713
San Francisco Bay Area	New United Motor Manufacturing	Fremont	556
San Francisco Bay Area	Valero Refining Company	Benicia	494
San Francisco Bay Area	ConocoPhillips - San Francisco	Rodeo	464

Table 2-6

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent almanacs.
The list of facilities does not include military bases, landfills, or airports.

Statewide Emissions Maps - Ozone Precursors

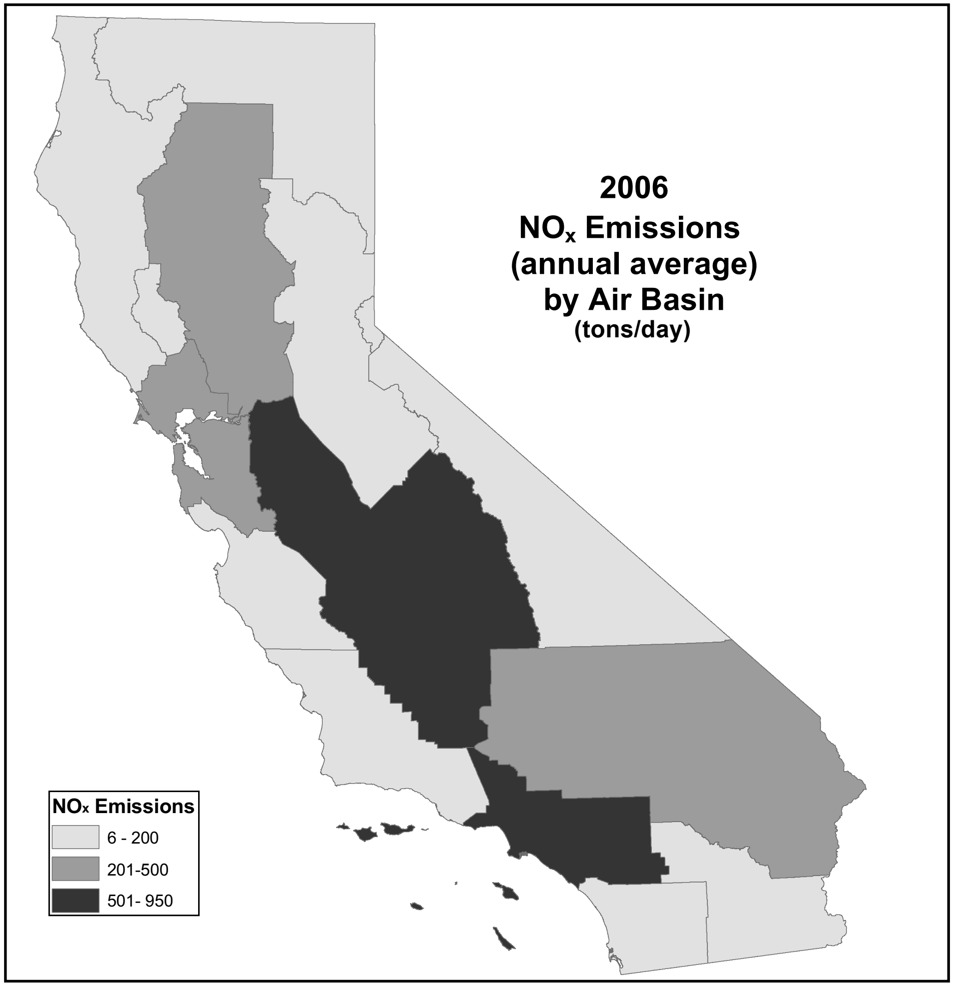

Figure 2-3

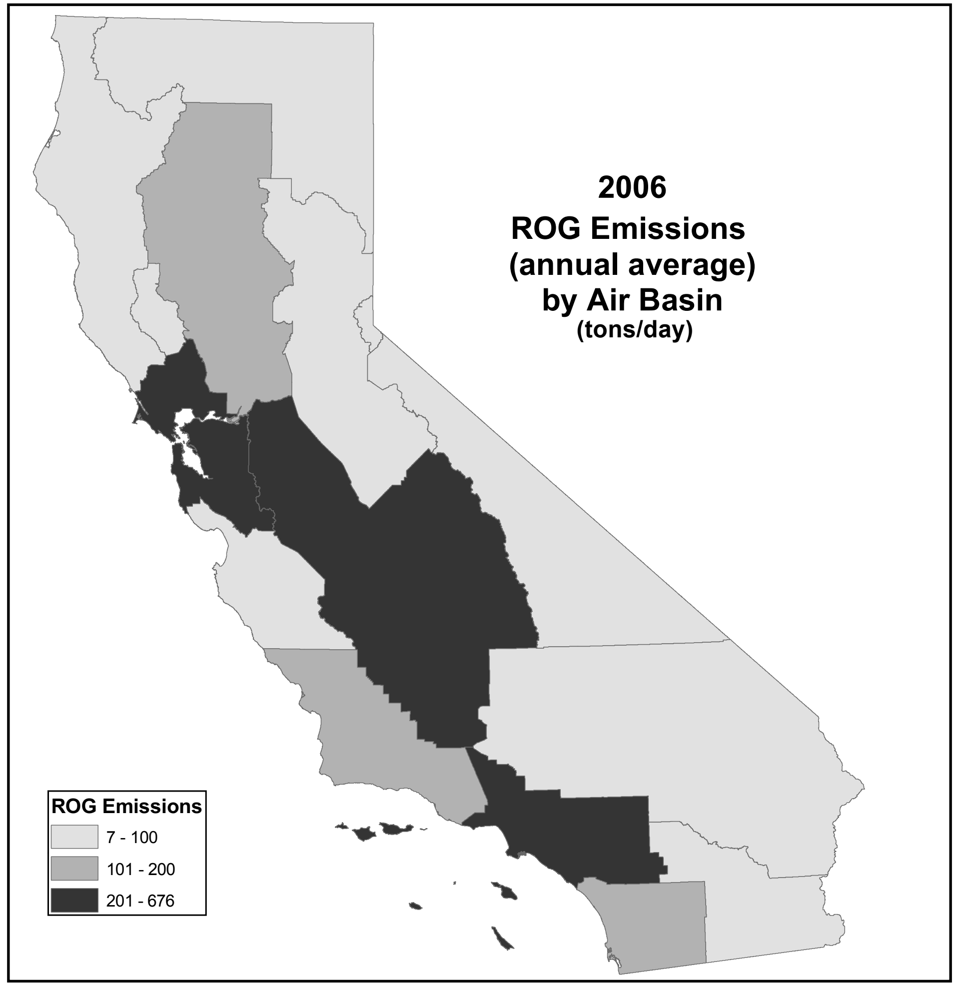

Figure 2-4

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Ozone - 2005 Air Quality

Air quality as it relates to ozone has improved greatly in California over the last several decades, although not uniformly throughout the State. However, despite aggressive emission controls, maximum measured ozone concentrations still exceed the State 1-hour and national 8-hour standards in 11 of the 15 air basins. California's highest ozone concentrations occur in the South Coast Air Basin, where the peak 1-hour and 8-hour indicators are close to two times the level of the State standards.

Ozone concentrations are generally lower near the coast than they are inland. The inland regions typically experience some of the higher ozone concentrations. This is because there are many more days with hot temperatures and stagnant conditions that are conducive to ozone formation. Typically, they also have mountain ranges which keep pollutants trapped. Based on current ozone concentrations, substantial additional emission control measures will be needed to attain the standards throughout the State. 2005 air quality data for California's five largest air basins can be found in Chapter 4, along with preliminary 2006 ozone data.

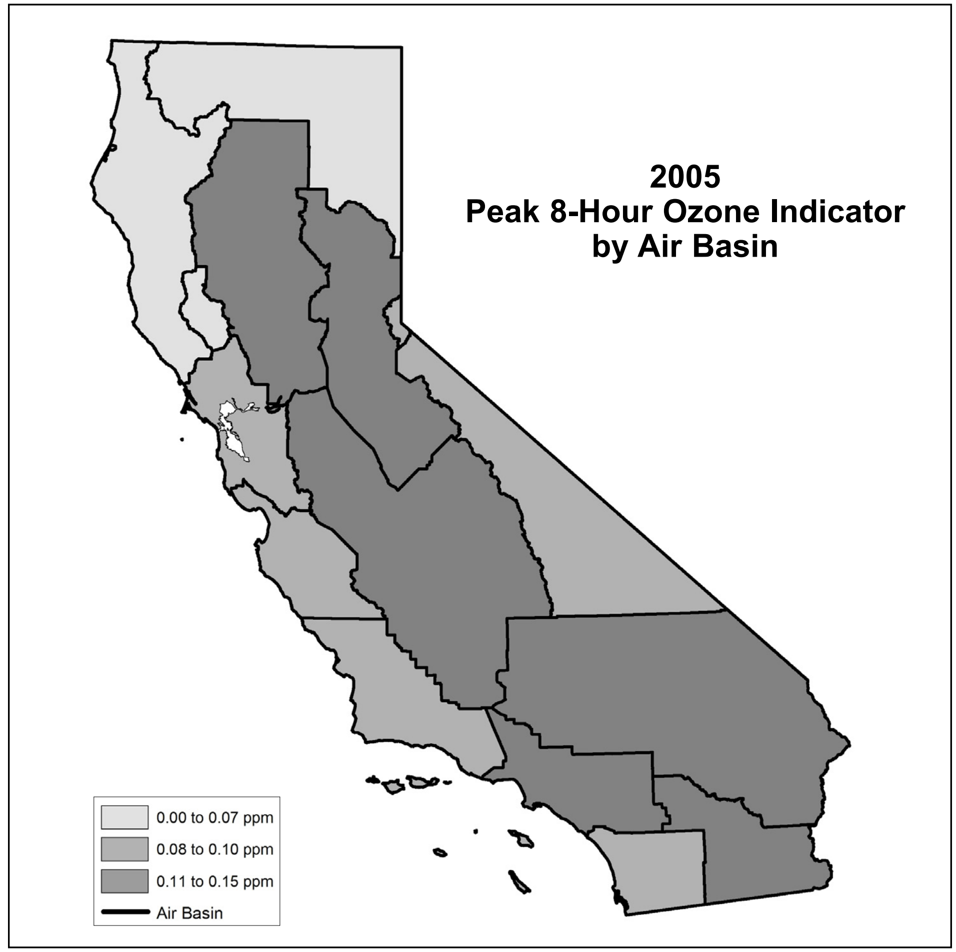

Figure 2-5

Ozone - 2005 Air Quality Tables

Peak 1-Hour and 8-Hour Indicator and Exceedance Days by Air Basin

AIR BASIN	2005 Peak Indicator in parts per million (State)		Number of Days in 2005 above the Standard		
			State		National
	1-Hour	8-Hour	1-Hour	8-Hour	8-Hour
Great Basin Valleys	0.092	0.089	1	47	4
Lake County	0.076	0.067	0	0	0
Lake Tahoe	0.084	0.079	0	2	0
Mojave Desert	0.138	0.120	66	128	55
Mountain Counties	0.130	0.116	41	85	38
North Central Coast	0.097	0.084	2	7	1
North Coast	0.077	0.065	0	0	0
Northeast Plateau	0.078	0.074	0	0	0
Sacramento Valley	0.131	0.116	33	62	25
Salton Sea	0.131	0.120	54	102	43
San Diego	0.113	0.089	16	51	5
San Francisco Bay Area	0.122	0.094	9	9	1
San Joaquin Valley	0.144	0.124	83	124	72
South Central Coast	0.116	0.102	17	67	12
South Coast	0.174	0.152	99	138	83

Table 2-7

Top Sites with Peak 8-Hour Indicator Values above the State 8-Hour Ozone Standard

Great Basin Valleys Air Basin
- Death Valley Nat'l Monument

Lake Tahoe Air Basin
- South Lake Tahoe-1901 Airport Rd

Mojave Desert Air Basin
- Joshua Tree-National Monument
- Hesperia-Olive Street
- Phelan-Beekley Rd & Phelan Rd
- Lancaster-43301 Division Street
- Mojave-923 Poole Street

Mountain Counties Air Basin
- Cool-Highway 193
- Grass Valley-Litton Building
- Placerville-Gold Nugget Way
- Colfax-City Hall
- San Andreas-Gold Strike Road

North Central Coast Air Basin
- Pinnacles National Monument
- Hollister-Fairview Road
- Scotts Valley-Scotts Valley Drive
- Carmel Valley-Ford Road

Northeast Plateau Air Basin
- Yreka-Foothill Drive

Table 2-8

Sacramento Valley Air Basin
- Folsom-Natoma Street
- Sloughhouse
- Sacramento-Del Paso Manor
- Auburn-Dewitt C Avenue
- Roseville-N Sunrise Blvd

Salton Sea Air Basin
- Palm Springs-Fire Station
- Indio-Jackson Street
- El Centro-9th Street
- Westmorland-W 1st Street
- Calexico-East
- Calexico-Ethel Street

San Diego Air Basin
- Alpine-Victoria Drive
- Camp Pendleton
- Escondido-East Valley Parkway
- San Diego-Overland Avenue
- Del Mar-Mira Costa College

San Francisco Bay Area Air Basin
- Livermore-793 Rincon Avenue
- San Martin-Murphy Avenue
- Concord-2975 Treat Blvd
- Los Gatos
- Gilroy-9th Street

San Joaquin Valley Air Basin
- Arvin-Bear Mountain Blvd
- Sequoia and Kings Canyon Nat'l Park
- Parlier
- Merced-S Coffee Avenue
- Fresno-1st Street
- Fresno-Sierra Skypark #2

South Central Coast Air Basin
- Simi Valley-Cochran Street
- Ojai-Ojai Avenue
- Piru-3301 Pacific Avenue
- Thousand Oaks-Moorpark Road
- Paradise Rd.-Los Padres Nat'l Forest

South Coast Air Basin
- Redlands-Dearborn
- Santa Clarita
- Crestline
- Fontana-Arrow Highway
- San Bernardino-4th Street

Sites with 8-hour peak indicator values above the level of the State ozone standard during 2005. The top five sites in each air basin are listed in descending order of their peak indicator value. If an air basin is not listed, the peak indicator values at sites in that air basin were not above the State 8-hour ozone standard. If more than 5 sites are listed, there were multiple sites with the same maximum concentration.

The Nature of Particulate Matter (PM_{10} and $PM_{2.5}$)

PM_{10} is a mixture of particles and droplets that vary in size and chemical composition, depending on each particle's origin. PM_{10} includes the subsets of "coarse" particles, those between 2.5 microns and 10 microns in diameter ($PM_{2.5-10}$), and "fine" particles, those 2.5 microns or smaller ($PM_{2.5}$). Particulate matter can be directly emitted into the air in the form of dust and soot (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia (secondary PM). Primary particles are mostly coarse in size, but include some fine particles, while secondary particles are mostly fine.

Sources of ambient PM include: combustion sources such as trucks and passenger cars, off-road equipment, industrial processes, residential wood burning, and forest/agricultural burning; fugitive dust from paved and unpaved roads, construction, mining, and agricultural activities; and ammonia sources such as livestock operations, fertilizer application, and motor vehicles. In general, combustion processes emit and form fine particles, whereas particles from dust sources tend to fall in the coarse range.

The levels and chemical make-up of ambient PM vary widely from one area to another. In some areas, PM levels vary strongly by season. This is due to seasonal activity increase for some emissions sources and to weather conditions that are conducive to the build-up of PM. Seasonal sources of PM include wildfires, agricultural processes, dust storms, and residential wood burning. Stagnant conditions and cool temperatures during the winter contribute to the formation of secondary ammonium nitrate, leading to higher ambient $PM_{2.5}$ concentrations. Warm, stagnant conditions during the summer lead to the formation of secondary ammonium sulfate, contributing to higher $PM_{2.5}$ concentrations. Dry weather and windy conditions cause higher coarse PM emissions, resulting in elevated PM_{10} concentrations.

The remainder of the discussion on PM includes summarized emission inventory data for directly emitted PM_{10} and $PM_{2.5}$, summarized information on ambient PM_{10} and $PM_{2.5}$ concentrations, and description of the link between source emissions and ambient PM concentrations in selected regions of the State.

Consistent with last year's almanac, is the reporting of both State and national statistics for PM_{10} and $PM_{2.5}$. State and national values may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved for assessing compliance with each standard, and 3) the State PM and national $PM_{2.5}$ standards use local conditions while the national PM_{10} standard uses standard conditions for data reporting.

Directly Emitted Particulate Matter (PM_{10})

2006 Statewide Emission Inventory - Directly Emitted PM_{10} by Category

Area-wide sources account for about 85 percent of the statewide emissions of directly emitted PM_{10}. The major area-wide source of PM_{10} is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of PM_{10} emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute a relatively small portion of directly emitted PM_{10} emissions but are a major source of the ROG and NO_x that form secondary particles. The section titled *PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured PM_{10} levels.

PM_{10} Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	136	7%
Area-wide Sources	1777	85%
On-Road Mobile	85	4%
Gasoline Vehicles	36	2%
Diesel Vehicles	49	2%
Other Mobile	88	4%
Gasoline Vehicles	33	2%
Diesel Vehicles	44	2%
Other	11	1%
Total Statewide	***2086***	***100%***

Table 2-9

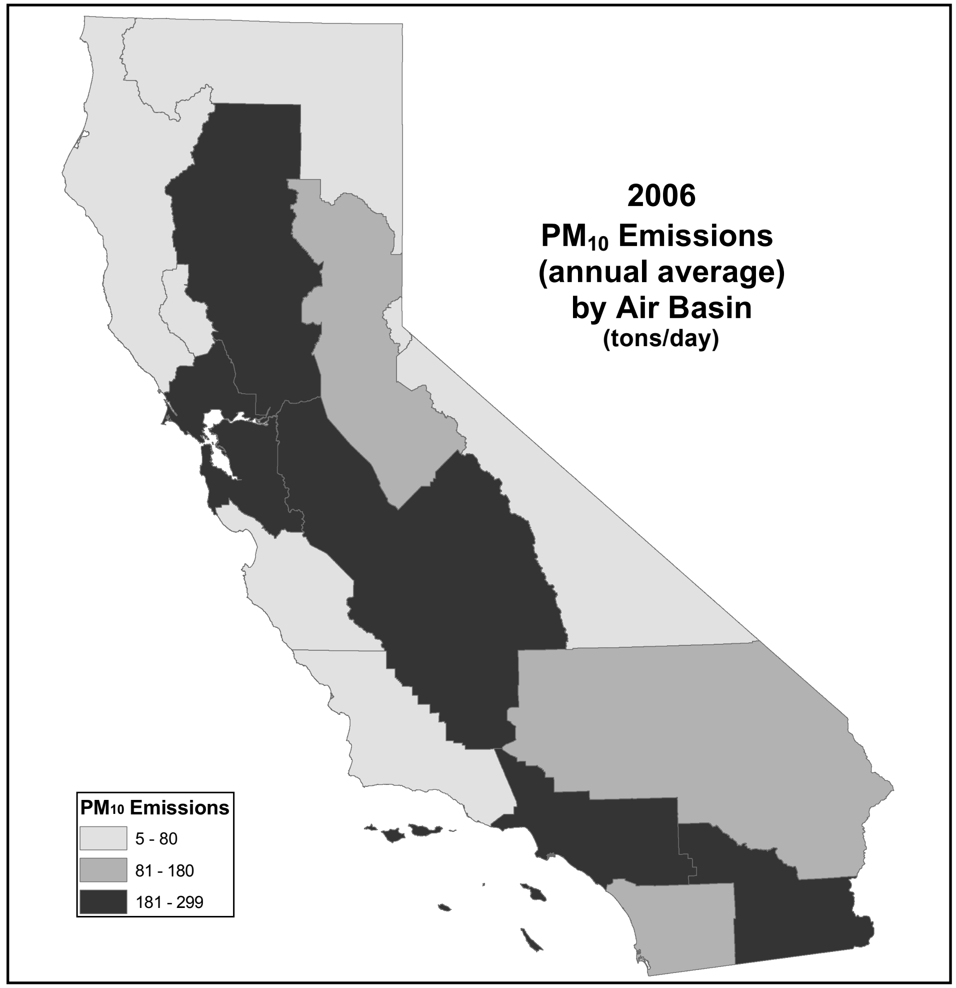

Figure 2-6

Largest Stationary Sources Statewide

Largest Stationary Sources of Directly Emitted PM_{10} Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	1468
Mojave Desert	TXI Riverside Cement Company	Oro Grande	755
Mojave Desert	Antelope Valley Aggregate	Littlerock	691
Mountain Counties	Sierrapine Ltd Ampine Division	Martell	518
San Francisco Bay Area	Shell Martinez Refinery	Martinez	373
South Coast	ChevronTexaco Products	El Segundo	356
Mojave Desert	California Portland Cement	Mojave	329
Mojave Desert	National Cement	Lebec	309
South Coast	BP West Coast Products Carson Refinery	Carson	298
Mojave Desert	Granite Construction	Littlerock	297

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac.
The list of facilities does not include military bases, landfills, or airports.

Table 2-10

Directly Emitted Particulate Matter ($PM_{2.5}$)

2006 Statewide Emission Inventory - Directly Emitted $PM_{2.5}$ by Category

Area-wide sources account for about 66 percent of the statewide emissions of directly emitted $PM_{2.5}$. The major area-wide source of $PM_{2.5}$ is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of $PM_{2.5}$ emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ emissions, but are a major source of the ROG and NO_x that form secondary particles. The section titled *PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured $PM_{2.5}$ levels.

$PM_{2.5}$ Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	83	12%
Area-wide Sources	450	66%
On-Road Mobile	66	10%
Gasoline Vehicles	22	3%
Diesel Vehicles	43	6%
Other Mobile	81	12%
Gasoline Vehicles	29	4%
Diesel Vehicles	41	6%
Other	11	2%
Total Statewide	***680***	***100%***

Table 2-11

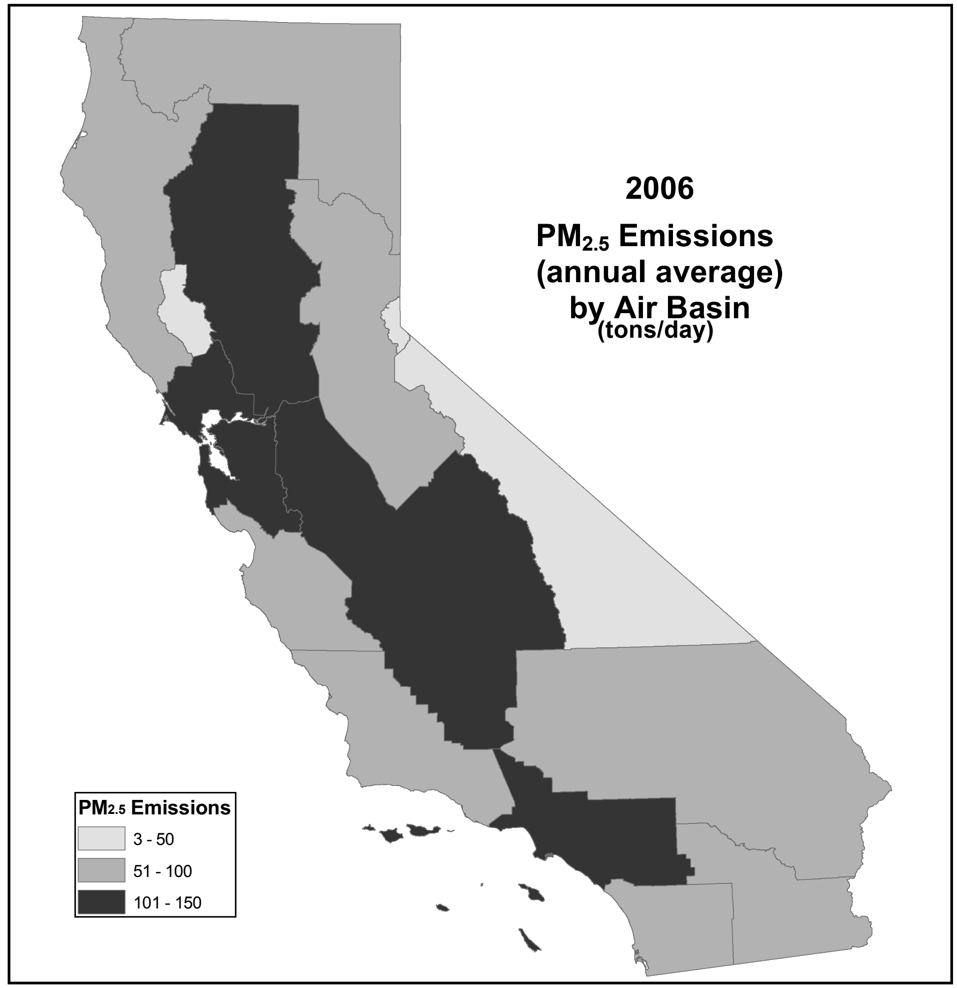

Figure 2-7

Largest Stationary Sources Statewide

Largest Stationary Sources of Directly Emitted $PM_{2.5}$ Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	928
Mountain Counties	Sierrapine Ltd Ampine Division	Martell	414
San Francisco Bay Area	Shell Martinez Refinery	Martinez	360
Mojave Desert	TXI Riverside Cement Company	Oro Grande	344
South Coast	ChevronTexaco Products	El Segundo	303
South Coast	BP West Coast Products Carson Refinery	Carson	284
Mojave Desert	Antelope Valley Aggregate	Littlerock	257
San Francisco Bay Area	Chevron Products Company	Richmond	232
Sacramento Valley	Johns-Manville (Insulation)	Willows	220
Mojave Desert	Searles Valley Minerals	Trona	213

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac. The list of facilities does not include military bases, landfills, or airports.

Table 2-12

PM_{10} - 2005 Air Quality

Most areas of California have either 24-hour or annual PM_{10} concentrations that exceed the State standards. Some areas exceed both State standards. Several areas, both urban and rural, also exceed the national standards. The highest annual average values during 2005 occurred in the Salton Sea, South Coast, San Diego, San Joaquin Valley, and Great Basin Valleys air basins. The 2005 data are summarized in Table 2-13. The highest 24-hour concentrations generally occurred in the desert areas where wind-blown dust contributes to local PM_{10} problems. However, the 2005 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Current area designations can be found on the ARB website at *www.arb.ca.gov/desig/desig.htm*.

Particles resulting from combustion contribute to high PM_{10} in a number of urban areas. While many of the control programs implemented for ozone will also reduce PM_{10}, more controls specifically for PM_{10} will be needed to reach attainment.

The table on the following page lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site or different monitor. For example, the State and national maximum 24-hour concentrations in the Great Basin Valleys, Mojave Desert, and Mountain Counties air basins reflect measurements from two different sites.

In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic (e.g. in the Mountain Counties and the San Diego air basins, due to differing State and national data completeness criteria, the State and national maximum annual averages reflect values from two different sites.)

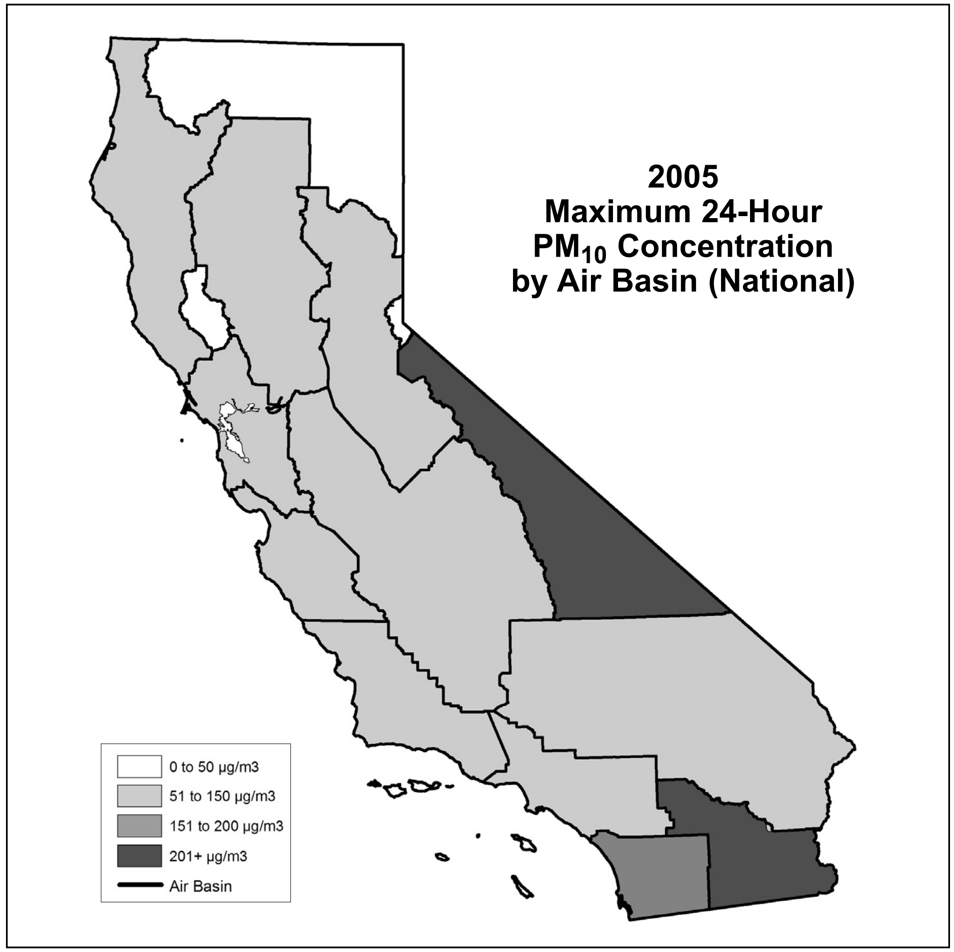

Figure 2-8

PM_{10} - 2005 Air Quality Tables

Maximum 24-Hour and Annual PM_{10} Concentrations by Air Basin

AIR BASIN	2005 Maximum 24-Hour Concentration in micrograms/cubic meter		2005 Maximum Annual Average of Quarters in micrograms/cubic meter	
	State	National**	State	National
Great Basin Valleys	1720	3988	30.1	83.5
Lake County	20	*	9.7	*
Lake Tahoe	33	38	14.8	17.5
Mojave Desert	70	131	26.1	28.9
Mountain Counties	73	127	18.0	29.9
North Central Coast	69	66	24.3	23.6
North Coast	71	67	18.6	18.0
Northeast Plateau	28	29	13.3	13.9
Sacramento Valley	109	110	30.4	27.2
Salton Sea	220	211	52.7	53.2
San Diego	154	155	28.6	49.8
San Francisco Bay Area	81	78	24.2	23.5
San Joaquin Valley	137	131	44.5	44.3
South Central Coast	87	83	25.6	27.7
South Coast	131	131	50.4	51.8

* Data provided may be incomplete or may not meet the reporting criteria required for the related standard.
** The 24-hour PM10 max for each basin is based on data obtained from federal reference monitors and federal equivalent monitors operating in the basin.

24-hour data - The table may include data from extreme, exceptional, or unusual concentration events: however, there is a mechanism in place to review for these types of events during the area designation process.
Annual average data - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.
NOTE: According to the Exceptional Events log, no exceptional events were recorded in 2005.

Table 2-13

Top Sites with 24-Hour Concentrations above the State PM_{10} Standard

Great Basin Valleys Air Basin
- Mono Lake North Shore
- Shell Cut-Highway 190
- Dirty Sox
- Flat Rock-Highway 190
- Keeler-Cerro Gordo Road

Mojave Desert Air Basin
- Barstow
- Lucerne Valley-Middle School
- Victorville-14306 Park Avenue
- Hesperia-Olive Street
- Twentynine Palms-Adobe Road #2

Mountain Counties Air Basin
- Yosemite Village-Visitor Center
- Quincy-N Church Street

North Central Coast Air Basin
- Davenport
- Moss Landing-Sandholt Road

North Coast Air Basin
- Eureka-I Street

Sacramento Valley Air Basin
- North Highlands-Blackfoot Way
- Sacramento-3801 Airport Road
- Colusa-Sunrise Blvd
- Sacramento-Del Paso Manor
- Chico-Manzanita Avenue

Salton Sea Air Basin
- Calexico-Grant Street
- Calexico-Ethel Street
- Indio-Jackson Street
- El Centro-9th Street
- Niland-English Road

San Diego Air Basin
- Otay Mesa-Paseo International
- San Diego-12th Avenue
- San Diego-1110 Beardsley Street
- Chula Vista

San Francisco Bay Area Air Basin
- Redwood City
- San Jose-Tully Road
- Bethel Island Road
- Pittsburg-10th Street
- Fremont-Chapel Way

San Joaquin Valley Air Basin
- Corcoran-Patterson Avenue
- Visalia-North Church Street
- Hanford-South Irwin Street
- Fresno-1st Street
- Bakersfield-Golden State Highway
- Oildale-3311 Manor Street

South Central Coast Air Basin
- Lompoc-South H Street
- Simi Valley-Cochran Street
- Nipomo-Guadalupe Road
- Ojai-Ojai Avenue
- El Rio-Rio Mesa School #2

South Coast Air Basin
- Long Beach-East Pacific Coast Highway
- Riverside-Rubidoux
- Fontana-Arrow Highway
- Burbank-West Palm Avenue
- Norco-Norconian

Table 2-14

Sites with 24-hour PM_{10} concentrations above the level of the State PM_{10} standard during 2005. The top five sites in each air basin are listed in descending order of their maximum 24-hour concentration. If an air basin is not listed, the 24-hour PM_{10} concentrations at sites in that air basin were not above the State 24-hour PM_{10} standard. If more than 5 sites are listed, there were multiple sites with the same maximum concentration.

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$PM_{2.5}$ - 2005 Air Quality

As explained in the Introduction section of Chapter 1, the U.S. EPA has promulgated national 24-hour and annual average standards for $PM_{2.5}$. The ARB has established a more health-protective State annual average $PM_{2.5}$ standard.

The 2005 data from California's $PM_{2.5}$ network are summarized in Table 2-15. Sites in the South Coast Air Basin recorded the highest national 24-hour concentrations, while sites in the San Joaquin Valley Air Basin recorded the highest 98th percentile 24-hour concentrations (see footnote on the following page for an explanation of the 98th percentile statistic). However, the 2005 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Sites in the South Coast and San Joaquin Valley air basins recorded the highest annual average concentrations in the State. The annual averages for these areas were nearly twice the level of the State annual $PM_{2.5}$ standard. Current area designations can be found on the ARB website at *www.arb.ca.gov/desig/adm/adm.htm*.

The table on the following page lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site or monitor. In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic (e.g. maximum 24-hour concentrations in the Mountain Counties and South Central Coast air basins, and maximum 24-hour concentrations and maximum annual averages for the Salton Sea and San Joaquin Valley air basins.)

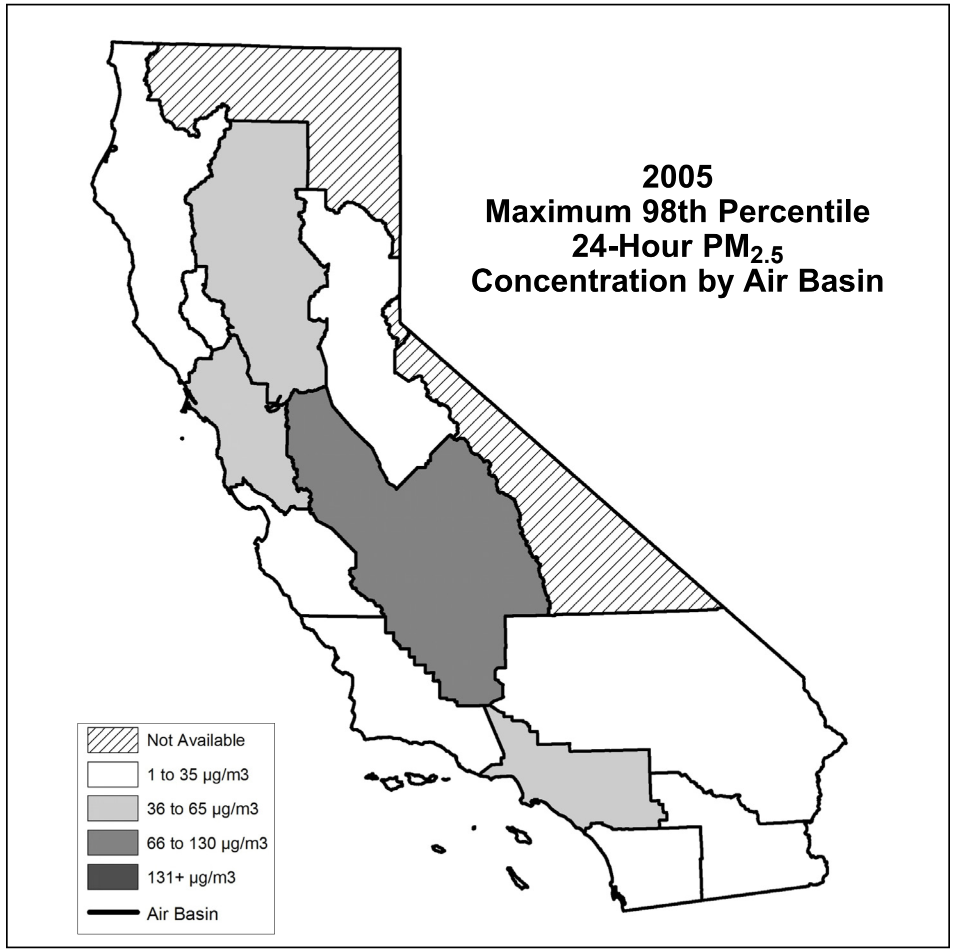

Figure 2-9

$PM_{2.5}$ - 2005 Air Quality Tables

Maximum 24-Hour, 98th Percentile, and Annual $PM_{2.5}$ Concentrations by Air Basin

AIR BASIN	2005 Maximum 24-Hr Concentration in micrograms/cubic meter		98th Percentile 24-Hr Conc. (ug/m³)*	2005 Max Annual Avg of Quarters in micrograms/cubic meter*	
	State	National		State	National
Great Basin Valleys	27.0	27.0	Incomplete Data	Incomplete Data	Incomplete Data
Lake County	11.3	11.3	10.5	4.8	4.8
Lake Tahoe	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data
Mojave Desert	28.0	28.0	20.0	8.9	9.4
Mountain Counties	179.7	60.0	27.0	10.6	10.6
North Central Coast	21.7	21.7	14.2	6.8	6.8
North Coast	31.8	31.8	15.2	6.2	6.2
Northeast Plateau	26.0	26.0	Incomplete Data	Incomplete Data	Incomplete Data
Sacramento Valley	82.7	80.0	54.0	13.8	12.3
Salton Sea	85.2	67.6	22.1	15.5	9.1
San Diego	44.1	44.1	30.2	Incomplete Data	11.8
San Francisco Bay Area	54.6	54.6	39.8	11.8	11.8
San Joaquin Valley	102.1	92.5	74.9	22.4	19.9
South Central Coast	51.1	42.4	26.3	11.7	11.2
South Coast	132.6	132.6	58.3	21.0	21.0

* These statistics and determination of their validity are calculated according to the methods specified in 40 CFR Part 50, Appendix N. Validity is based on the number of measurements available per quarter and therefore, depends on data completeness. Both the 98th percentile concentration and the average of quarters concentration relate to the national $PM_{2.5}$ standards, while only the average of quarters concentration relates to the State $PM_{2.5}$ standard.
24-hour data - The table may include data from extreme, exceptional, or unusual concentration events: however, there is a mechanism in place to review for these types of events during the area designation process.
Annual average data - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.
Table 2-15

PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality

The size, concentration, and chemical composition of PM vary by region and by season. A number of areas exhibit strong seasonal patterns. Other areas have a much more uniform distribution with PM concentrations remaining high throughout the year. In yet other areas, isolated PM exceedances can occur at any time of the year.

In the San Joaquin Valley, the San Francisco Bay Area, and the Sacramento region, there is a strong seasonal variation in PM, with higher PM_{10} and $PM_{2.5}$ concentrations in the fall and winter months (refer to Figure 2-10). In the winter, PM_{10} and $PM_{2.5}$ concentrations remain elevated for extended periods. These higher concentrations are caused by increased activity for some emission sources and meteorological conditions that are conducive to the build-up of PM. During the winter, the $PM_{2.5}$ size fraction drives the PM concentrations, and the major contributor to high levels of ambient $PM_{2.5}$ is the secondary formation of PM caused by the reaction of NO_x and ammonium to form ammonium nitrate. The San Joaquin Valley also records high PM_{10} levels during the fall. During this season, both the coarse fraction and the $PM_{2.5}$ fraction drove the PM concentrations.

In the eastern South Coast region, PM_{10} and $PM_{2.5}$ concentrations remain high throughout the year (refer to Figure 2-11). The more uniform activity patterns of emission sources, as well as less variable weather patterns, leads to this more uniform concentration pattern. In other areas, high PM can be more episodic than seasonal. For example, in the Owens Lake area of the Great Basin Valleys Air Basin, episodic fugitive dust events lead to very high PM_{10} levels, with soil dust as the major contributor to ambient PM_{10}.

Analysis of PM chemical composition data collected from a variety of routine and special monitoring programs provides insight into the fraction of $PM_{2.5}$ that is secondary. Data were obtained from the California $PM_{2.5}$ and PM_{10} monitoring networks, California Regional PM_{10}/$PM_{2.5}$ Air Quality Study, Children's Health Study,

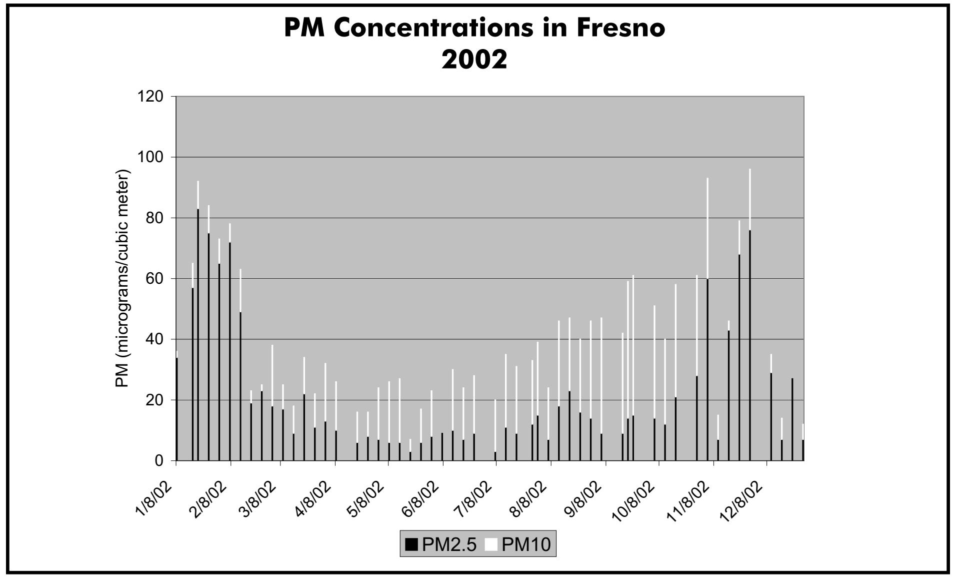

Figure 2-10

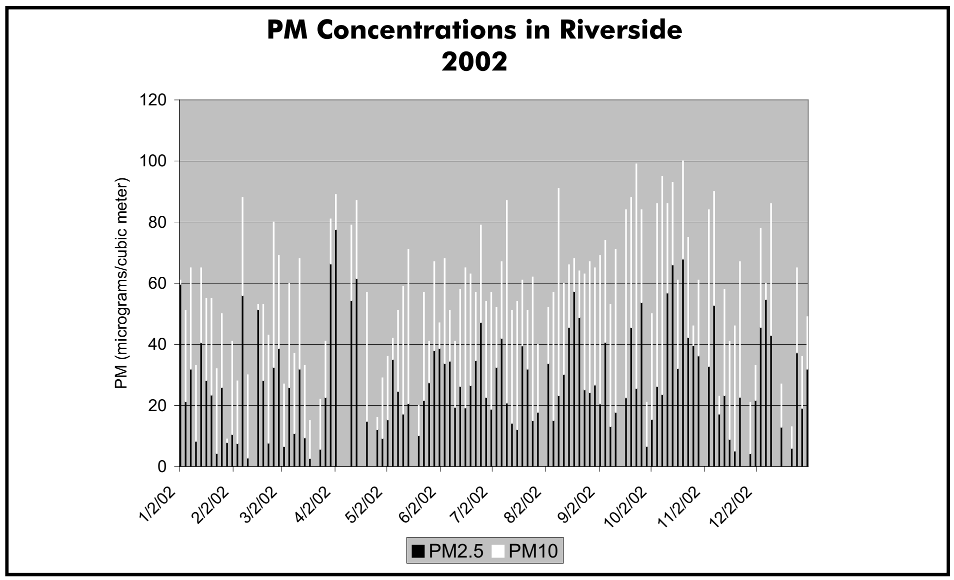

Figure 2-11

Integrated Monitoring and Protected Visual Environments Program, and South Coast Air Quality Management District's PM Technical Enhancement Programs of 1995 and 1998-1999. Secondary $PM_{2.5}$ estimates include ammonium nitrate and ammonium sulfate components, which form through reactions in the atmosphere of nitrogen oxides and sulfur oxides emitted by motor vehicles and other combustion processes. $PM_{2.5}$ also includes secondary organic aerosols (SOA) resulting from atmospheric reactions of organic compounds emitted from combustion sources and biogenic processes. Since only limited information is available on how much of the measured $PM_{2.5}$ organic carbon component is secondary, SOA are not included in the secondary $PM_{2.5}$ estimates. However, available studies suggest that in the South Coast, on an annual average basis, SOA may constitute 6 to 16 percent of $PM_{2.5}$ (Schauer et. al. 1996) and in urban areas of the San Joaquin Valley, during the winter, SOA may contribute up to an average of eight percent of $PM_{2.5}$ (Schauer and Cass, 1998).

Chemical Mass Balance (CMB) models are used to establish which sources and how much of their emissions contribute to ambient PM concentrations. CMB models use chemical composition data from ambient PM samples and from emission sources. These data are often collected during special source attribution studies. The source attribution data presented in this section were derived from a variety of studies with differing degrees of chemical speciation. In general, however, the source categories can be interpreted in the following manner. The road and other dust, wood smoke, cooking, vehicle exhaust, and construction categories represent sources which directly emit particles. Road and other dust represents the combination of mechanically disturbed soil (paved and unpaved roads, agricultural activities) and wind-blown dust. Wood smoke generally represents residential wood combustion, but may also include combustion from other biomass burning such as agricultural or prescribed burning. The vehicle exhaust category represents direct motor vehicle exhaust particles from both gasoline and diesel vehicles. Construction reflects construction and demolition activities. Ammonium nitrate and ammonium sulfate represent secondary species (i.e., they form in the atmosphere from the emissions of NO_x, SO_x, and ammonia). Combustion sources such as motor vehicles and stationary sources contribute to the NO_x that forms ammonium nitrate. Mobile sources such as diesel vehicles, locomotives, and ships and stationary combustion sources emit the SO_x that forms ammonium sulfate. Ammonia sources include animal feedlots, fertilizers, and motor vehicles. The other carbon sources category reflects organic sources not included in the source attribution models, such as natural gas combustion, as well as secondary organic carbon formation. The unidentified category represents the mass that cannot be accounted for by the identified source categories. It can include particle-bound water, as well as other unidentified sources.

Estimated Secondary Portion of $PM_{2.5}$ (annual average)	
Air Basin	Secondary $PM_{2.5}$ (%)
Great Basin Valleys	30
Lake County	30
Lake Tahoe	40
Mojave Desert	40
Mountain Counties	30
North Central Coast	40
North Coast	30
Northeast Plateau	30
Sacramento Valley	30
Salton Sea	40
San Diego	50
San Francisco Bay Area	40
San Joaquin Valley	40
South Central Coast	50
South Coast	60

Table 2-16

The figures on the following pages present the best available source attribution data from CMB modeling for selected regions. These presentations are representative of typical days when the State PM_{10}

standards are exceeded (refer to Chapter 1, for a review of the State standards). The fractions of the constituents shown can vary daily and from year to year, depending on factors such as meteorology.

A detailed description of PM_{10} and $PM_{2.5}$ characteristics in each of California's 35 air districts by air basin is included in the ARB's technical report titled *"Characterization of Ambient PM_{10} and $PM_{2.5}$ in California,"* which can be found on the ARB website at *www.arb.ca.gov/pm/pm.htm.*

San Joaquin Valley Air Basin

Figures 2-12 and 2-13 illustrate contributions to ambient PM in the San Joaquin Valley during the winter and on an annual average basis. These are the results from analysis of data collected during the California Regional $PM_{10}/PM_{2.5}$ Air Quality Study. (San Joaquin Valley Air Pollution Control District, 2003)

During the winter in Fresno, secondary ammonium nitrate was the largest contributor to PM_{10}, formed from NO_x emissions from mobile and stationary combustion sources, combined with ammonia. Emissions from wood smoke, vehicle exhaust, and road and agricultural sources also contribute significantly to PM_{10} levels. On an annual average basis, elevated concentrations of PM_{10} were associated with high levels of road and agricultural dust. Secondary ammonium nitrate, wood smoke, and vehicle exhaust particles also contributed significantly to annual PM_{10} concentrations.

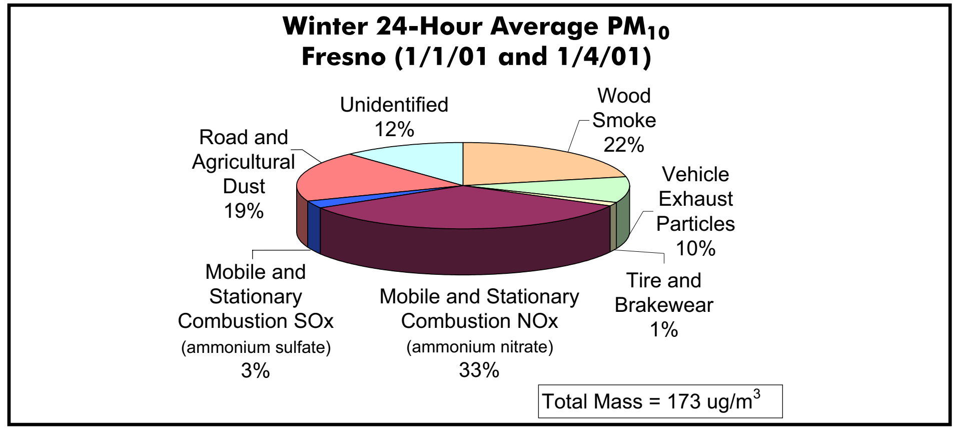

Figure 2-12

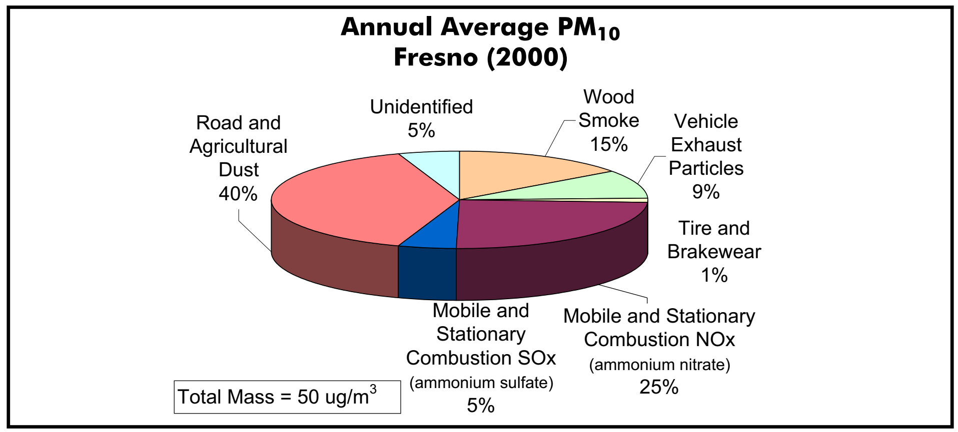

Figure 2-13

San Francisco Bay Area Air Basin

Figures 2-14 and 2-15 illustrate the sources of PM during the winter in the San Francisco Bay Area. The data are from the source apportionment analysis conducted by the Bay Area Air Quality Management District using samples collected during two special studies (Fairley, 1996, 2001).

During the winter, in San Jose, high PM concentrations are associated with high levels of wood smoke, primarily from residential wood combustion, and cooking. NO_x emitted from mobile and stationary combustion sources, in combination with ammonia, contributes about one-fourth of the PM levels in the form of ammonium nitrate. Particle emissions from mobile and stationary combustion sources are also a major contributor to $PM_{2.5}$. Road dust is a significant contributor to PM_{10}, but not $PM_{2.5}$.

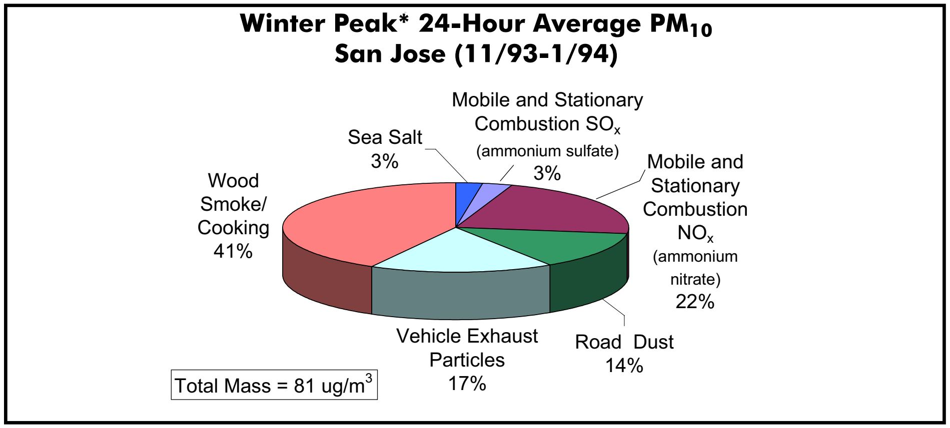

Figure 2-14

* Average of days with PM_{10} > 50 ug/m^3

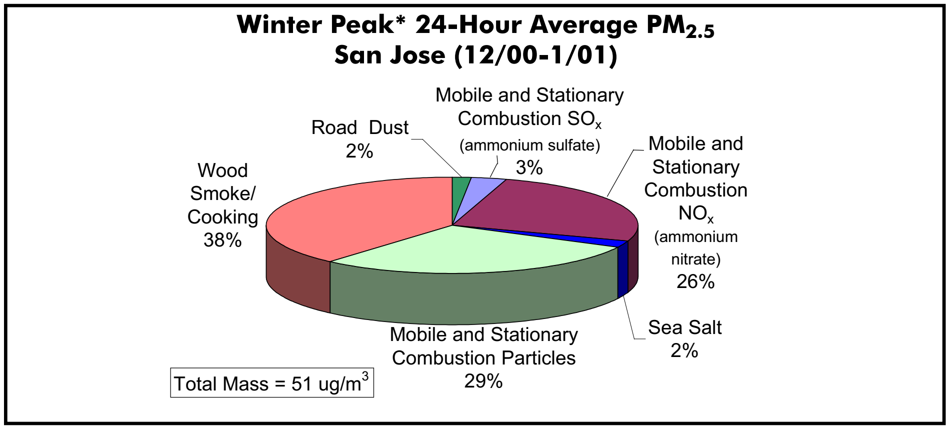

Figure 2-15

* Average of days with $PM_{2.5}$ > 40 ug/m^3

Sacramento Valley Air Basin

Figures 2-16 and 2-17 illustrate source contributions to ambient PM_{10} and $PM_{2.5}$ during the winter in Sacramento. The data are from the analysis of ambient air samples collected from November through January, during the six year period of 1991 through 1996 (Motallebi, 1999).

NO_x emissions from mobile and stationary combustion sources, combined with ammonia to form ammonium nitrate, are the largest contributor to ambient PM levels. Vehicle exhaust particle emissions and wood smoke from residential wood combustion also contribute significantly. While road and other dust is a significant component of ambient PM_{10}, its contribution to $PM_{2.5}$ is minor.

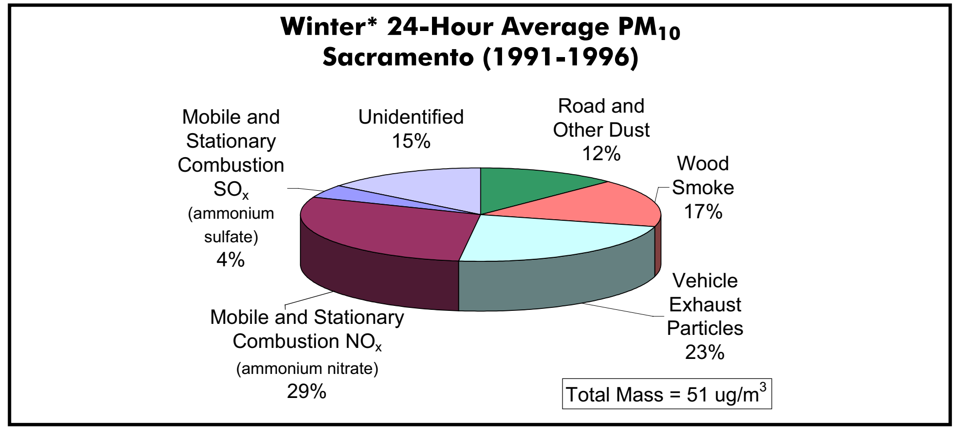

Figure 2-16

* Average of days with PM_{10} > 40 ug/m3

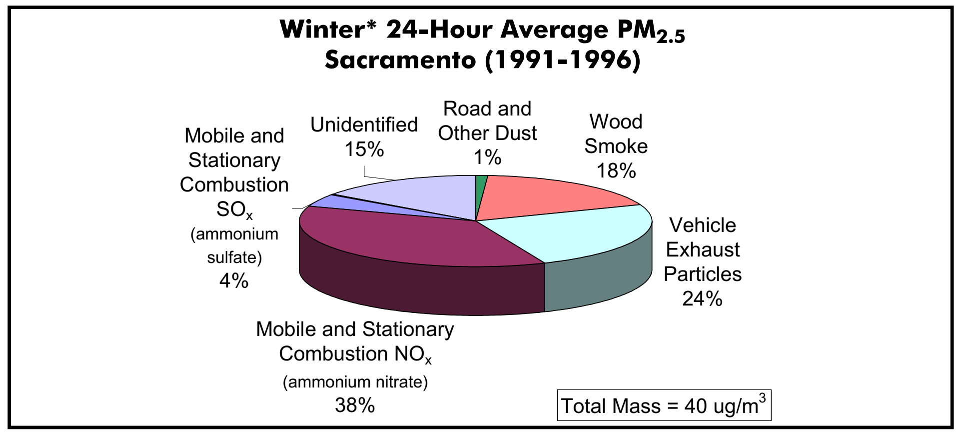

Figure 2-17

* Average of days with PM_{10} > 40 ug/m3

South Coast Air Basin

Data for Figures 2-18, 2-19, 2-20, and 2-21 are from the source apportionment analysis that the South Coast Air Quality Management District (SCAQMD) performed for the 1997 Air Quality Management Plan. SCAQMD collected samples during a one-year special study from January 1995 to February 1996, as part of the PM_{10} Technical Enhancement Program (SCAQMD, 1996).

On an annual basis, in Central Los Angeles, dust from roads and construction is the major contributor to ambient PM_{10}. This is not the case for the episode on November 17, 1995. In both cases, NO_x and SO_x emitted from mobile and stationary combustion sources, combined with ammonia, contribute significantly in the form of ammonium nitrate and sulfate. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM_{10} levels.

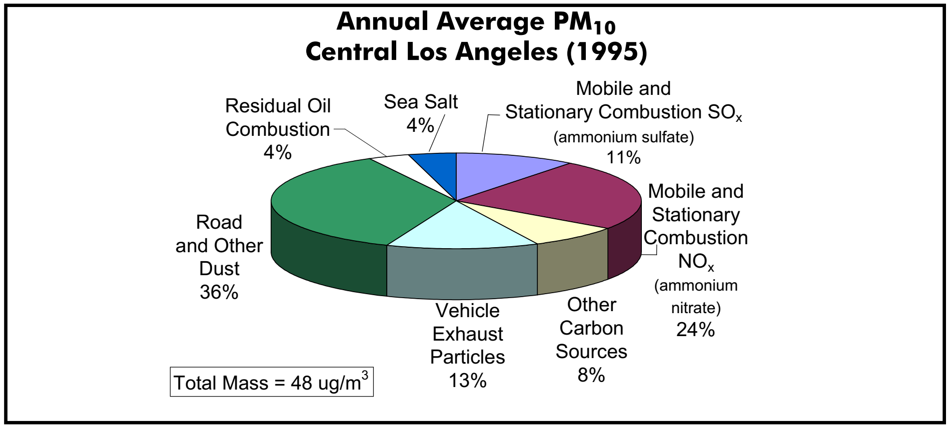

Figure 2-18

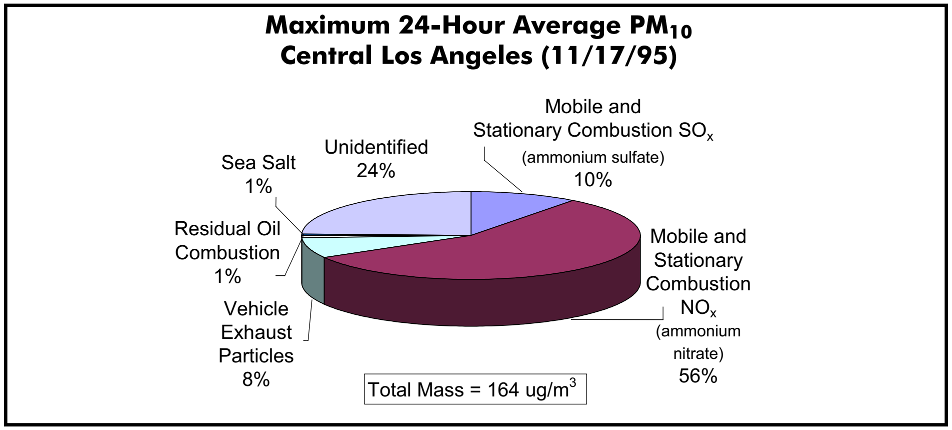

Figure 2-19

South Coast Air Basin (cont'd)

On an annual basis, in Rubidoux, dust from roads and construction is the major contributor to ambient PM_{10}. In contrast, dust was a minor contributor to the PM_{10} episode on November 17, 1995. In both cases, ammonium nitrate formed from NO_x emitted from mobile and stationary combustion sources, combined with ammonium, contributes significantly. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM_{10} levels.

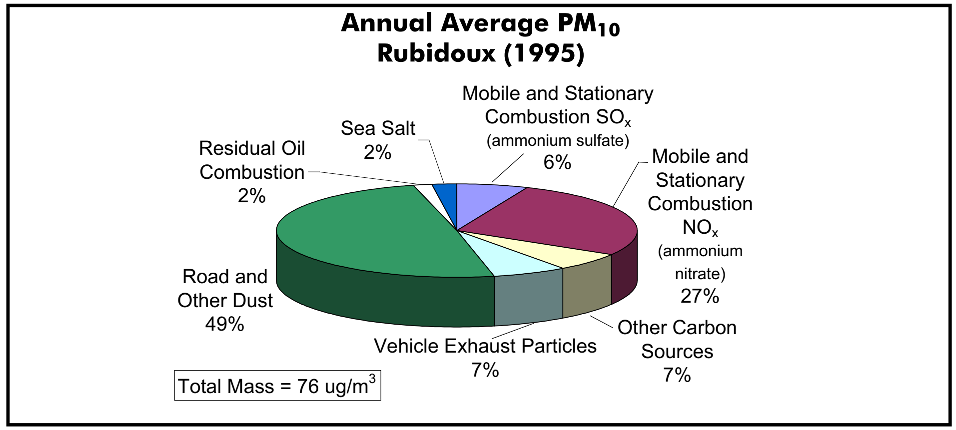

Figure 2-20

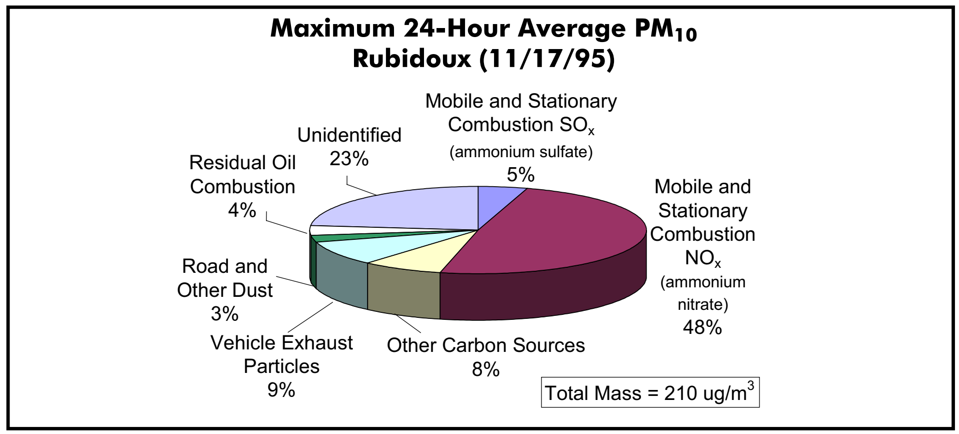

Figure 2-21

References for Particulate Matter:

Fairley, D. *Source Apportionment of Bay Area Particulates.* 1996; Personal communication.

Fairley, D. *$PM_{2.5}$ Source Apportionment for San Jose 4th Street.* 2001; Personal communication.

Motallebi, N. *Wintertime PM_{10} and $PM_{2.5}$ Source Apportionment at Sacramento, California.* Journal of the Air & Waste Management Association 1999; 49:PM-25-34.

South Coast Air Quality Management District. *"Modeling and Attainment Demonstrations"* in 1997 Air Quality Management Plan, Diamond Bar, California. 1996.

Schauer, J. J., Rogge, W. F., Hidemann, L. M., Mazurek, M. A., and Cass, G. R. *Source Apportionment of Airborne Particulate Matter Using Organic Compounds as Tracers.* Atmospheric Environment; 30: 22, 3837-3855, 1996.

San Joaquin Valley Air Pollution Control District. *2003 PM_{10} Plan: San Joaquin Valley Plan to Attain Federal Standards for Particulate Matter 10 Microns and Smaller.* Appendix N.

Carbon Monoxide

2006 Statewide Emission Inventory - Carbon Monoxide by Category

Carbon monoxide (CO) gas is formed as the result of incomplete combustion of fuels and waste materials such as gasoline, diesel fuel, wood, and agricultural debris. Mobile sources generate about 82 percent of the statewide CO emissions. Diesel-powered on-road and other mobile vehicles are small CO contributors. Stationary and area-wide sources of CO are the same types of fuel combustion sources that also generate NO_x. The stationary source contribution to statewide CO is small, due in part to widespread use of natural gas as a fuel and the presence of combustion controls.

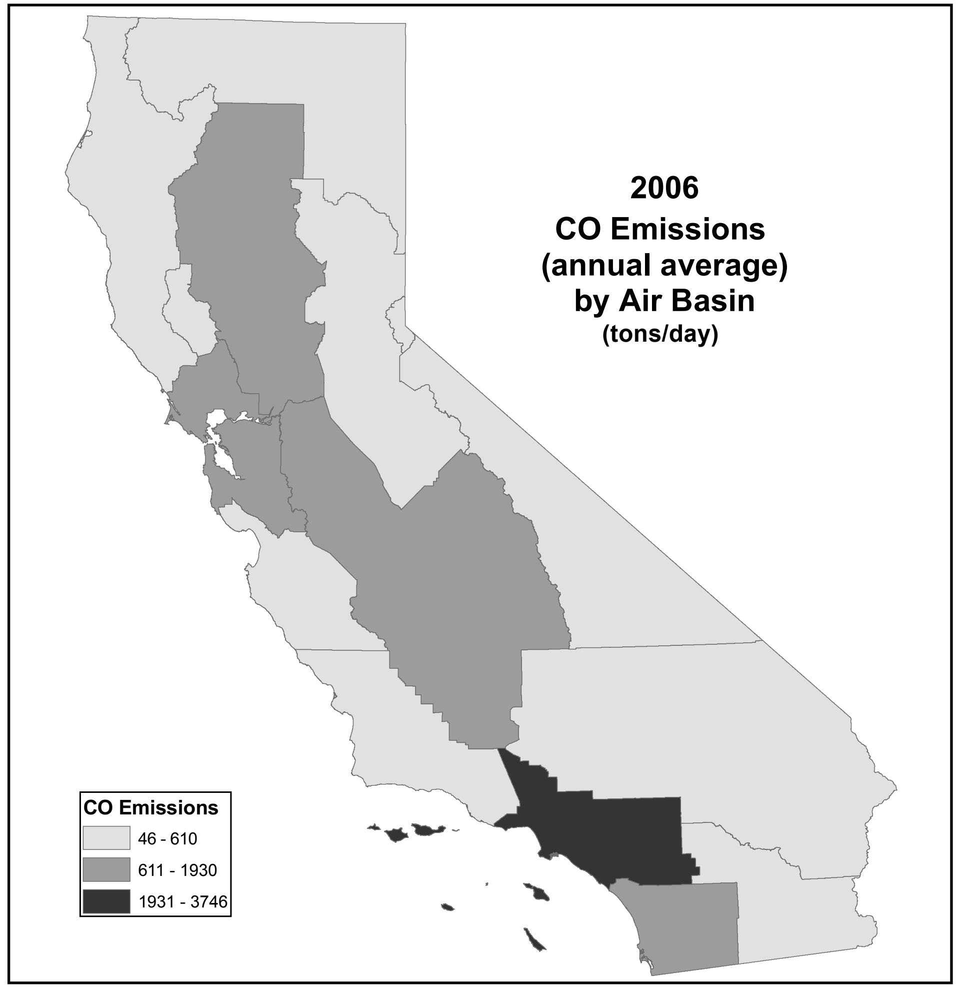

Figure 2-22

CO Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	346	3%
Area-wide Sources	1974	16%
On-Road Mobile	7189	58%
Gasoline Vehicles	6883	55%
Diesel Vehicles	306	2%
Other Mobile	2946	24%
Gasoline Vehicles	2225	18%
Diesel Vehicles	358	3%
Other	363	3%
Total Statewide	***12456***	***100%***

Table 2-17

Carbon Monoxide - 2005 Air Quality

The State and national CO standards are now attained statewide in California. The requirements for cleaner vehicles and fuels have been primarily responsible for the reductions in CO, despite significant increases in population, the number of vehicle miles traveled each day, and the apparent impact of emissions from Mexico.

The final problem area, the City of Calexico in Imperial County, now meets both national and State standards for CO.

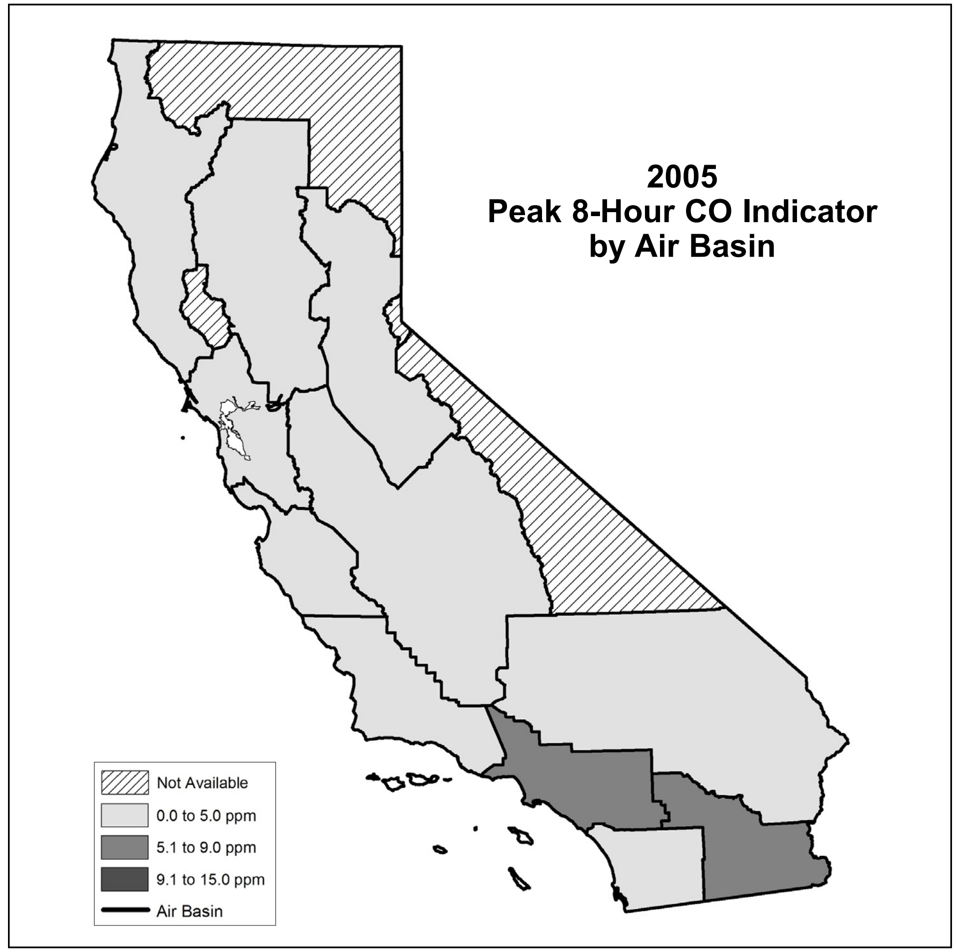

Figure 2-23

Carbon Monoxide - 2005 Air Quality Tables

Maximum Peak 8-Hour Indicator by Air Basin

AIR BASIN	2005 Maximum Peak 8-Hour Indicator in parts per million	Number of Days in 2005 above the 8-Hour Standard	
		State	National
Great Basin Valleys	No Data	No Data	No Data
Lake County	No Data	No Data	No Data
Lake Tahoe	No Data	No Data	No Data
Mojave Desert	1.9	0	0
Mountain Counties	2.8	0	0
North Central Coast	1.2	0	0
North Coast	1.8	0	0
Northeast Plateau	No Data	No Data	No Data
Sacramento Valley	4.4	0	0
Salton Sea	8.4	0	0
San Diego	4.5	0	0
San Francisco Bay Area	3.7	0	0
San Joaquin Valley	3.7	0	0
South Central Coast	1.9	0	0
South Coast	7.1	0	0

Table 2-18

Sites with Peak 8-Hour Indicator Values above the State CO Standard

No Sites had Peak 8-Hour Indicator Values above the State CO Standard

Ammonia

2006 Statewide Emission Inventory - Ammonia by Category

Area-wide sources account for 81 percent of the statewide emissions of ammonia. The major area-wide source of ammonia is livestock waste. Ammonia emissions from on-road vehicles are produced by three-way catalyst equipped gasoline vehicles. Ammonia emissions from stationary sources are primarily related to NO_x emission controls, the manufacture of a variety of products, and waste disposal.

Ammonia emission sources have strong geographic differences. In the San Joaquin Valley, ammonia emissions are dominated by livestock and other agricultural sources. However, in the South Coast Air Basin, motor vehicle sources are more significant.

NH_3 Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	78	11%
Area-wide Sources	599	81%
On-Road Mobile	61	8%
Gasoline Vehicles	60	8%
Diesel Vehicles	1	0%
Other Mobile*	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other	0	0%
Total Statewide	***738***	***100%***

* No data available

Table 2-19

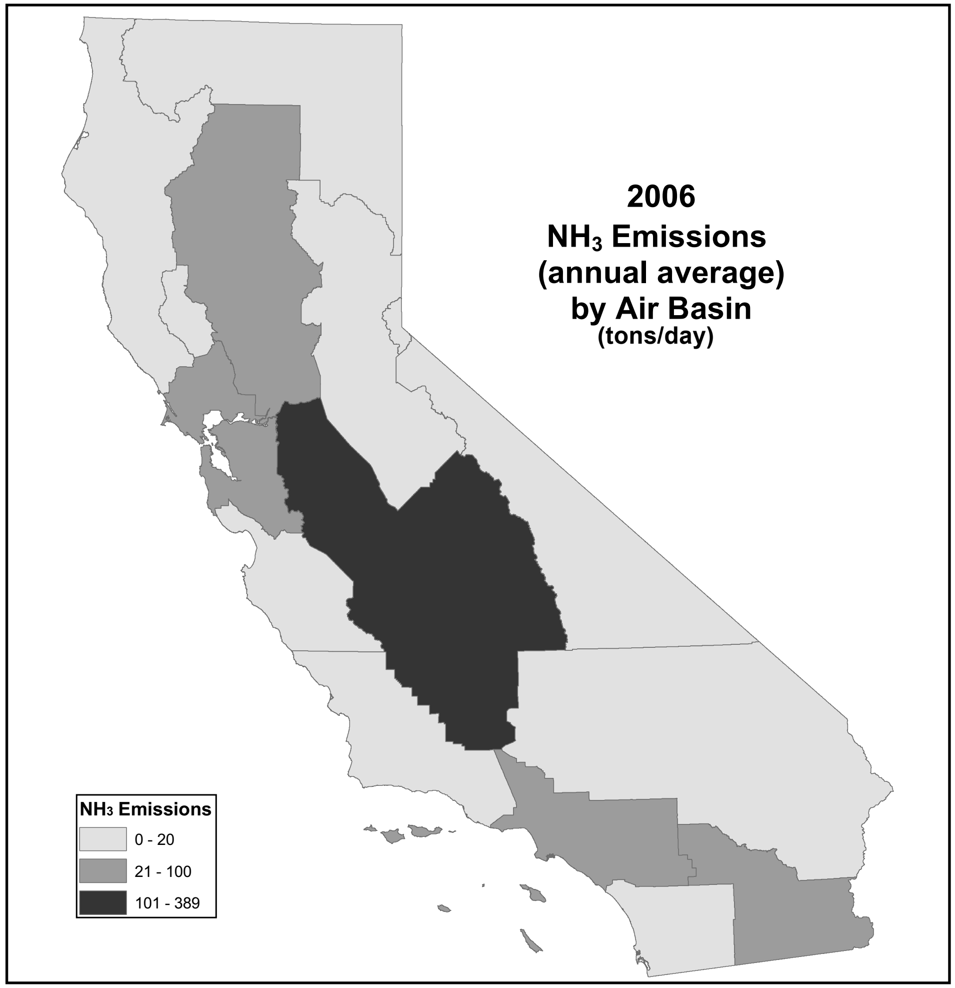

Figure 2-24

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Chapter 3

Statewide Trends and Forecasts -- Criteria Pollutants

Introduction
Emission Trends and Forecasts

The most current emissions data available are from 2006. Any data prior to this year are derived from historical emissions data where available, and backcasted emissions based on historical socioeconomic growth and control information. Future year data are forecasted from the 2006 base year and control measures reported through September 2006. Forecasts take into account emissions data, projected growth rates, and future adopted control measures to calculate emissions in future years.

On a statewide basis, emissions of NO_x increased between 1975 and 1980, decreased slightly in 1985, and are forecasted to decline between 1990 and 2020. Emissions of ROG decrease steadily between 1975 and 2020. In addition to being ozone precursors, both NO_x and ROG are secondary contributors to PM_{10} and $PM_{2.5}$. Direct PM_{10} emissions show an increase from 1975 to 1990, a slight decrease in 1995, hold relatively constant from 1995 to 2010, and then a slow increase after 2010. Direct $PM_{2.5}$ emissions decreased from 1975 to 1985, increased from 1985 to 1990, decreased slightly between 1990 and 1995, held relatively constant from 1995 to 2015, and are predicted to increase after 2015.

Emissions of CO have decreased since 1985 and are forecasted to continue declining. The recent decreases in NO_x, ROG, and CO are occurring even with increases in population and VMT.

Statewide SO_x emissions decreased sharply from 1975 through 1985, decreased steadily through 1995, and remained relatively constant through 2010. On-shore SO_x emissions are projected to increase moderately through 2020. Off-shore emissions are projected to increase substantially through 2020 due to increased shipping activity. In 2005, off-shore emissions represent approximately 40 percent of the statewide SO_x emission inventory. By 2020, off-shore emissions are forecasted to comprise 56 percent of the statewide SO_x emissions.

Statewide Emissions (tons/day, annual average)										
Pollutant	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
NO_X	4928	4941	4791	4991	4429	4025	3556	3025	2553	2273
ROG	7128	6598	5998	4707	3741	3084	2410	2087	1953	1911
PM_{10}	1864	1898	1982	2208	2105	2173	2125	2123	2186	2261
PM_{25}	718	693	691	754	687	696	685	680	690	709
SO_X	1277	953	529	504	294	285	295	323	382	462
CO	42207	37991	35302	30119	22439	17237	13167	10598	9188	8419

Table 3-1

Statewide Population and VMT

Airborne pollutants result in large part from human activities, and growth generally has a negative impact on air quality. California is fortunate in that it boasts the world's most progressive emission controls. These controls have resulted in significant air quality improvements, despite substantial growth.

During 1986 through 2005, statewide maximum 8-hour ozone values decreased 42 percent, and maximum 8-hour carbon monoxide values dropped 54 percent. These air quality improvements occurred at the same time the State's population increased 37 percent and the average daily VMT increased 66 percent. Ambient annual average PM_{10} values in the non-desert areas also show improvement: a 46 percent decrease from 1989 to 2005. While the air quality improvements are impressive, additional emission controls will be needed to offset future growth.

Percent Change in Air Quality and Growth

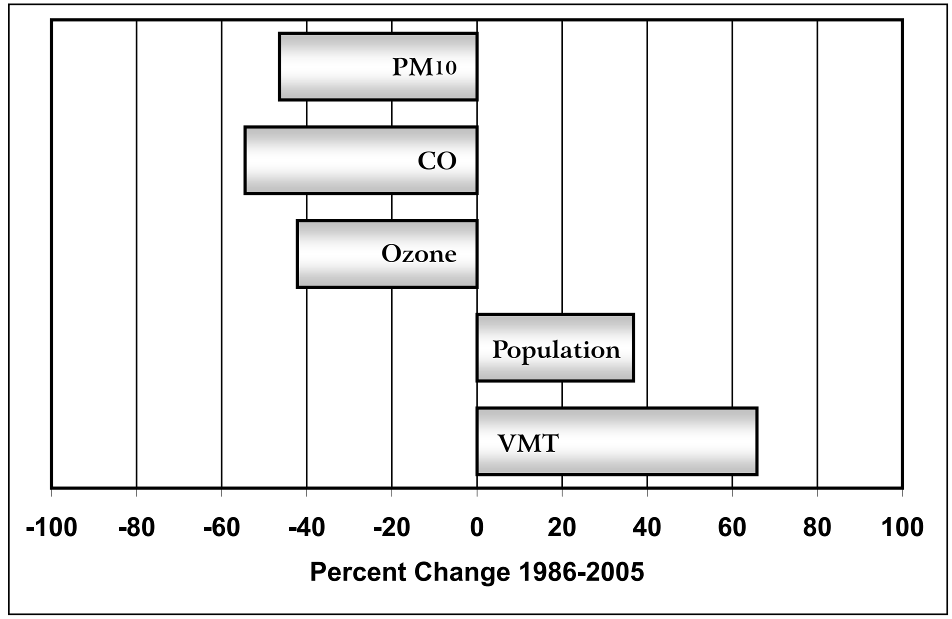

Figure 3-1

Statewide Population and VMT Trends									
Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	23782000	26402401	29828496	31711849	34098740	37004660	39246767	41549270	43851741
Avg. Daily VMT/1000	403567	538319	691048	733629	799848	955233	958078	1033400	1104522

Table 3-2

Ozone

Emission Trends and Forecasts - Ozone Precursors

NO_x Emission Trends and Forecasts

NO_x emission standards for on-road motor vehicles were introduced in 1971 and followed in later years by the implementation of more stringent standards and the introduction of three-way catalysts. NO_x emissions from on-road motor vehicles have declined by 23 percent from 1990 to 2000. NO_x emissions are projected to decrease by 66 percent between 2000 and 2020. This has occurred as vehicles meeting more stringent emission standards enter the fleet, and all vehicles use cleaner burning gasoline and diesel fuel or alternative fuels.

NOx emissions from other mobile categories on the whole decreased from 1990 to 2020. The two largest NOx contributors in the other mobile category are off-road combustion equipment and ships. The emissions from off-road combustion equipment decrease significantly over the entire forecast period. However, the emissions for ships have increased to better reflect actual shipping activity resulting in a fairly constant NO_x emission level for the trend and forecast period for the other mobile category as a whole. Stationary source NO_x emissions dropped by 68 percent between 1980 and 2005. This decrease has been largely due to a switch from fuel oil to natural gas and the implementation of combustion controls such as low-NO_x burners for boilers and catalytic converters for both external and internal combustion stationary sources. SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at *www.arb.ca.gov/planning/sip/sip.htm.*

In the previous edition of the Almanac, the NO_x emissions were lower for on-road motor vehicles from 1995 onward and lower for other mobile sources from 1990 onward. The higher values in this edition reflect the use of the EMFAC2007 and OFFROAD2007 models. Also in this edition, lower NO_x values for area-wide sources after 1995 are mainly the result of updates to the statewide waste burning categories.

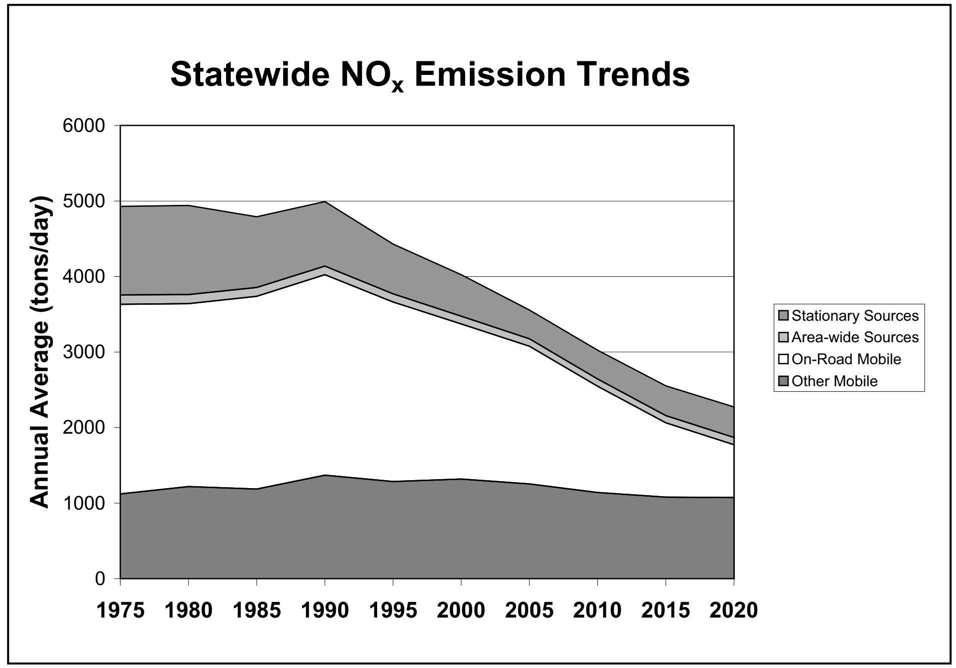

Figure 3-2

ROG Emission Trends and Forecasts

ROG emissions in California are projected to decrease by over 73 percent between 1975 and 2020, largely as a result of the State's on-road motor vehicle emission control program. This includes the use of improved evaporative emission control systems, computerized fuel injection, engine management systems to meet increasingly stringent California emission standards, cleaner gasoline, and the Smog Check program. ROG emissions from other mobile sources are projected to decline between 1990 and 2020 as more stringent emission standards are adopted and implemented. Substantial reductions have also been obtained for area-wide sources through the vapor recovery program for service stations, bulk plants, and other fuel distribution operations. There are also on-going programs to reduce overall solvent ROG emissions from coatings, consumer products, cleaning and degreasing solvents, and other substances used within California. Again, SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at *www.arb.ca.gov/planning/sip/sip.htm*.

The ROG emissions for other mobile sources are generally higher than the emissions presented in the previous edition of the Almanac. This is due to the use of the OFFROAD2007 model. Also, the ROG emissions for area-wide sources are lower than in the previous edition, due to updates for the waste burning categories.

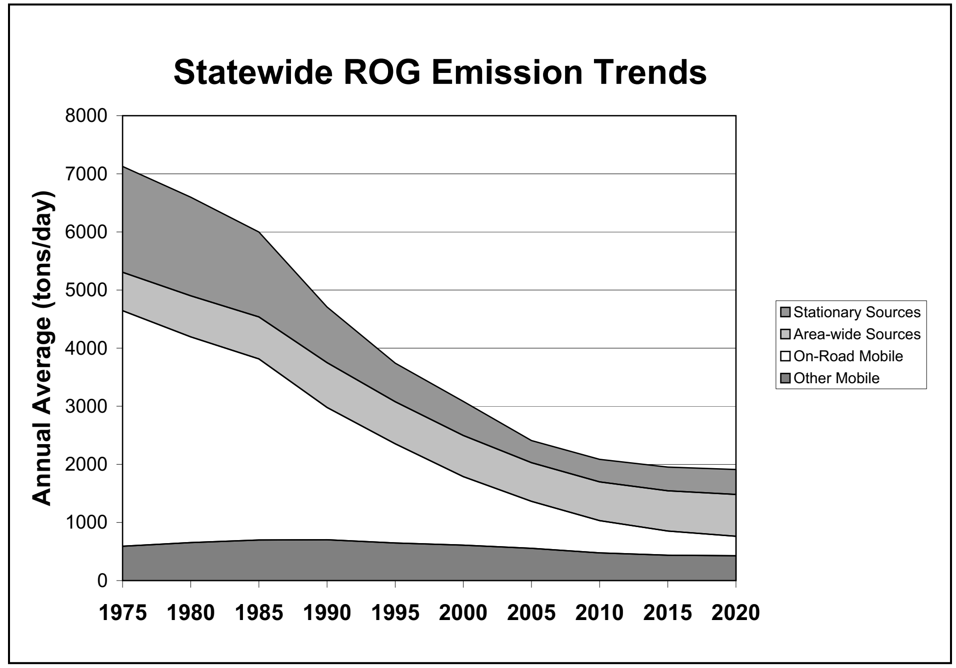

Figure 3-3

Emission Trends and Forecasts - Ozone Precursors

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***4928***	***4941***	***4791***	***4991***	***4429***	***4025***	***3556***	***3025***	***2553***	***2273***
Stationary Sources	1172	1180	936	853	659	551	381	381	394	404
Area-wide Sources	125	121	117	114	108	102	99	96	95	97
On-Road Mobile	2510	2421	2552	2654	2377	2053	1823	1407	984	699
Gasoline Vehicles	2197	2014	1958	1839	1574	1160	754	504	359	263
Diesel Vehicles	312	407	593	815	803	893	1069	904	625	435
Other Mobile	1122	1219	1186	1370	1286	1319	1254	1140	1079	1074
Gasoline Fuel	52	57	62	72	70	70	76	68	64	64
Diesel Fuel	917	1002	954	1095	980	966	854	696	567	464
Other Fuel	154	160	169	202	237	284	325	376	448	546

Table 3-3

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***7128***	***6598***	***5998***	***4707***	***3741***	***3084***	***2410***	***2087***	***1953***	***1911***
Stationary Sources	1822	1697	1460	958	664	588	381	389	408	428
Area-wide Sources	661	707	723	771	724	708	666	666	692	720
On-Road Mobile	4054	3540	3116	2275	1706	1179	808	555	417	334
Gasoline Vehicles	4015	3487	3044	2184	1645	1120	743	497	373	302
Diesel Vehicles	39	53	72	91	62	59	65	58	44	33
Other Mobile	591	654	699	703	647	610	555	477	436	428
Gasoline Fuel	416	462	518	498	457	436	396	341	316	316
Diesel Fuel	123	137	129	149	140	131	116	91	70	57
Other Fuel	52	56	52	56	50	42	43	45	50	56

Table 3-4

Statewide Air Quality - Ozone

Air quality as it relates to ozone has improved greatly in all areas of California over the last 20 years, despite significant growth. The statewide trend, which reflects values for the South Coast Air Basin, shows that the peak 8-hour and 1-hour indicators declined by over 40 percent and over 50 percent respectively from 1986 to 2005.

During 1986 to 2005, the statewide population grew by 37 percent and the number of vehicle miles traveled each day was up more than 66 percent. Motor vehicles are the largest source category of ozone precursor emissions, and reducing their emissions will continue to be the cornerstone of California's ozone control efforts. New vehicles must meet the ARB's low emission vehicle (LEV) standards, which equate to about 95 percent fewer smog-forming emissions than vehicles produced in the 1970s.

In recent years, increases in population and driving are partially offsetting the benefits of cleaner vehicles. In addition to motor vehicle controls, the ARB is establishing controls for other sources of ozone precursor emissions, such as consumer products. The ARB and other agencies are also looking at new and more efficient ways of doing business and implementing incentive programs to improve air quality.

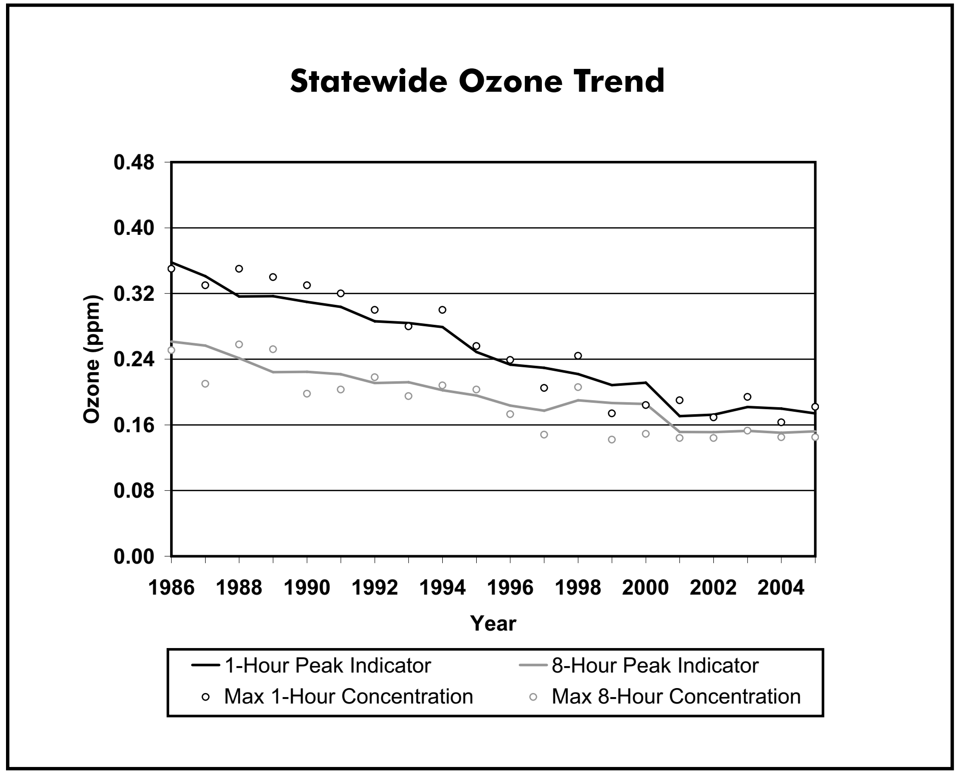

Figure 3-4

Population-Weighted Exposures Over the State Ozone Standard

There are a number of ways to look at how ozone levels have changed over the years. Though simple indicators are most commonly used, complex indicators can offer additional insight concerning air quality. One such indicator is the population-weighted exposure indicator. As used here, an “exposure” occurs when a person experiences an 8-hour ozone concentration outdoors that is higher than 0.070 ppm, the level of the State 8-hour standard. The population-weighted exposure indicator considers both the level and the duration of ozone concentrations above the State standard. The annual exposure is the sum of all the daily 8-hour ozone exposures during the year and presents the result as an average per exposed person. For a more detailed discussion see Appendix B.

In Figure 3-5, the population-weighted exposures have been graphed from 1985 to 2005 in order to provide a visual representation of how the ozone exposures, in ppm, are distributed over the years and how they compare with the increase in population. These values are meant to be a general representation of ozone exposure in the South Coast Air Basin. This graph gives a good indication of how ozone exposures have been steadily declining while the population has been increasing. For example, in Table 3-5 South Coast shows the highest exposure of all five air basins, however, the graph makes it clear that this exposure has been significantly declining and is now one fifth of what it was two decades ago.

The population-weighted exposures in Table 3-5 are listed for each year, from 1985 through 2005, for the five most populated areas of California. While these areas do not encompass all of California’s ozone nonattainment areas, they do include the urban areas where 86 percent of the State’s population lives.

This table also lists the percent of the total population represented in the exposure value. This reflects the percent of the total population in the area that was exposed to an ozone concentration above the level of the State 8-hour standard for at least one 8-hour period during the year. This method provides a reasonable approach for comparing exposures among various regions and for assessing trends in exposure reductions. Exposure values are presented in ppm to be consistent with the units in which the State standard is expressed.

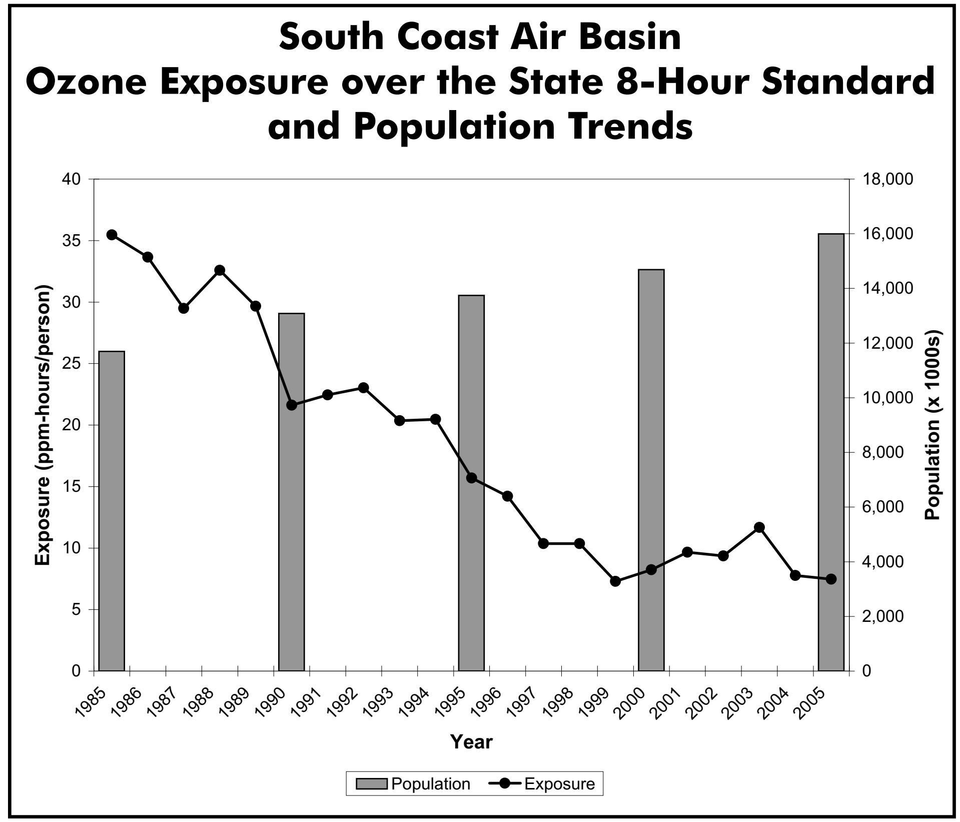

Figure 3-5

Ozone Exposures Over the State 8-Hour Standard: Population-Weighted (ppm-hours / person)																					
	1985	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
South Coast Air Basin																					
Exposure	35.46	33.66	29.48	32.59	29.67	21.62	22.45	23.03	20.36	20.47	15.70	14.22	10.36	10.36	7.29	8.24	9.67	9.36	11.68	7.77	7.47
% Pop. Represented *	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%	99%	92%	95%	97%	97%	81%	97%	100%	98%
San Francisco Bay Area Air Basin																					
Exposure	2.18	1.49	3.30	2.90	1.39	0.98	0.87	1.18	0.92	0.74	1.68	1.58	0.23	1.52	1.21	0.62	0.73	0.68	0.67	0.33	0.27
% Pop. Represented	69%	47%	69%	90%	59%	41%	41%	51%	66%	36%	88%	60%	68%	42%	64%	18%	34%	36%	68%	42%	41%
San Joaquin Valley Air Basin																					
Exposure	15.09	18.58	19.42	18.83	13.76	10.86	12.23	11.65	12.50	11.02	11.52	13.96	9.50	11.70	12.02	11.49	12.18	12.86	12.17	7.50	6.32
% Pop. Represented	96%	97%	97%	98%	98%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
San Diego Air Basin																					
Exposure	11.03	8.37	8.64	10.88	10.97	9.63	7.54	6.25	5.31	5.19	4.59	3.49	1.96	3.58	2.76	2.85	2.41	1.77	2.12	1.64	1.39
% Pop. Represented	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	94%	90%	100%	86%	54%	100%	42%
Broader Sacramento Metropolitan Area																					
Exposure	5.11	5.37	6.90	8.19	4.54	4.88	5.64	5.49	2.77	4.41	4.82	5.15	2.09	4.23	4.58	3.19	3.51	4.68	3.72	2.28	2.88
% Pop. Represented	95%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

* *% Population Represented* is the percent of the total population residing in an area exposed to an ozone concentration above the level of the State 8-hr standard for at least one 8-hour period during the year.

Table 3-5

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Ozone Transport

Since 1989, the ARB staff has evaluated the impacts of the transport of ozone and ozone precursor emissions from upwind areas to the ozone concentrations in downwind areas. These analyses demonstrate that the air basin boundaries are not true boundaries of air masses. All urban areas are upwind contributors to their downwind neighbors with the exception of San Diego. Figure 3-6 shows the upwind areas that impact downwind areas throughout the State.

The ozone problem in the southern desert areas and some rural areas is significantly impacted by transported pollutants. National ozone air quality plans take into account the shared responsibility between upwind and downwind areas where transport can at times be signficant. Areas impacted by overwhelming transport, although designated nonattainment, are not required to adopt an air quality plan to meet State standards because local control strategies in these areas would not be effective in reducing ozone concentrations. However, these areas are subject to many statewide control strategies, such as cleaner fuels and LEVs. More detailed information about ozone transport is available on the web at *www.arb.ca.gov/aqd/transport/transport.htm*.

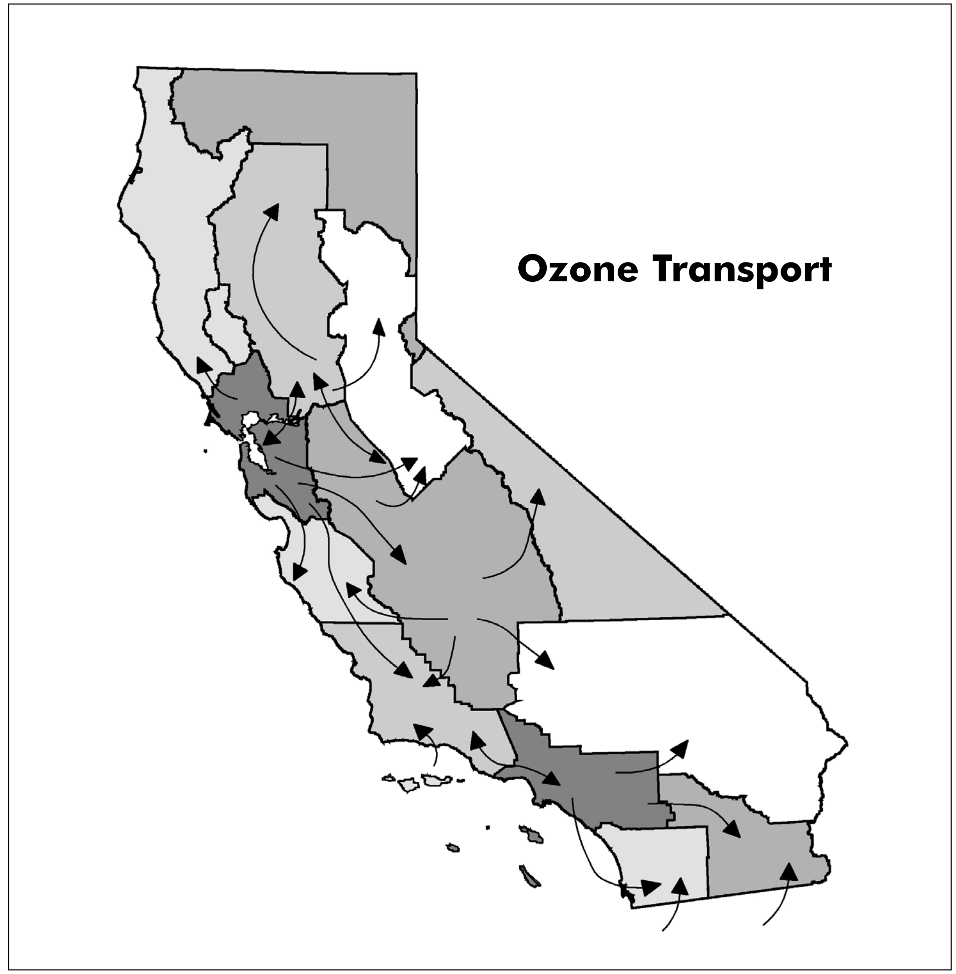

Figure 3-6

Directly Emitted Particulate Matter (PM_{10})

Emission Trends and Forecasts - Directly Emitted PM_{10}

PM_{10} emissions increase from 1975 to 1990, then decrease slightly in 1995, increase in 2000, decrease in 2005, and are projected to slowly increase after 2005. PM_{10} emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions generally increase through the forecast period. Other area-wide sources include farming operations, construction and demolition, and fugitive wind blown dust from agricultural lands. Emissions from these categories have compensating effects resulting in a fairly constant statewide emission level; emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 39 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. PM_{10} emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

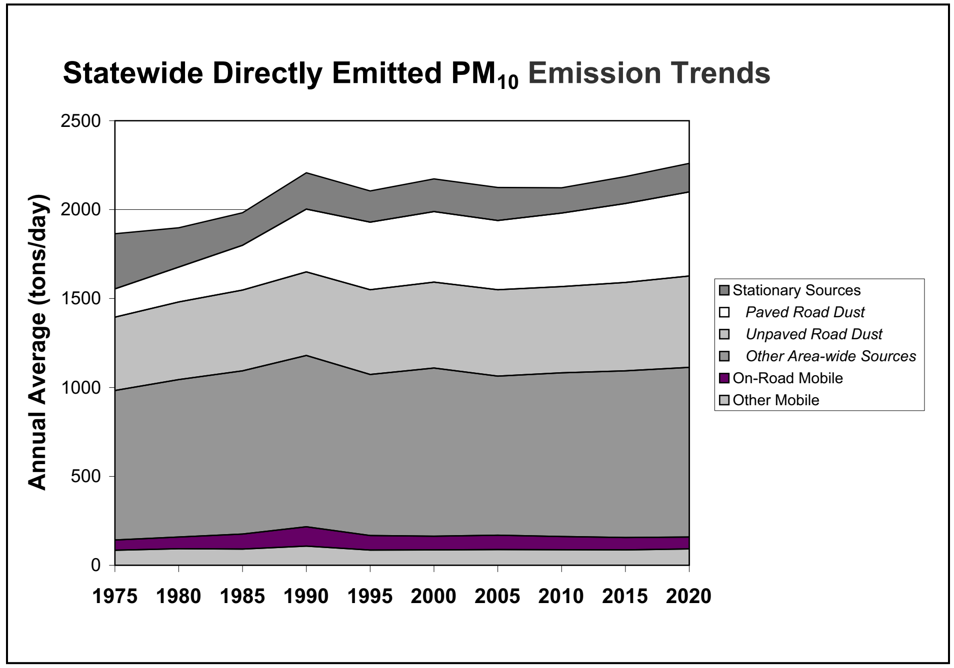

Figure 3-7

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1864***	***1898***	***1982***	***2208***	***2105***	***2173***	***2125***	***2123***	***2186***	***2261***
Stationary Sources	310	221	183	204	176	184	186	142	152	161
Area-wide Sources	1412	1518	1623	1787	1762	1826	1770	1819	1878	1941
Paved Road Dust	159	196	251	354	379	397	390	413	444	473
Unpaved Road Dust	412	437	454	470	477	483	486	485	497	514
Other Area-wide Sources	841	885	918	963	906	946	895	921	937	954
On-Road Mobile	57	66	85	109	82	77	81	75	69	66
Gasoline Vehicles	23	20	22	27	29	33	39	42	47	51
Diesel Vehicles	34	46	63	82	53	44	42	33	23	15
Other Mobile	85	93	91	107	86	87	88	87	87	92
Gasoline Fuel	6	7	9	10	11	12	12	15	18	22
Diesel Fuel	60	66	61	71	52	50	46	37	26	18
Other Fuel	19	20	21	26	23	25	30	35	42	52

Table 3-6

The PM_{10} emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updated fugitive dust emission estimates. The emissions for stationary sources are higher between 1975 and 2005 than in the previous edition, mainly due to updated cement production estimates for the South Coast air basin. Also, the emissions for on-road motor vehicles are higher than in the previous edition, due to the use of the EMFAC2007 model.

Directly Emitted Particulate Matter ($PM_{2.5}$)

Emission Trends and Forecasts - Directly Emitted $PM_{2.5}$

$PM_{2.5}$ emissions decrease from 1975 to 1980 as a result of reduced stationary source emissions. Emissions increase slightly between 1980 and 1990, hold steady through 2005, and are projected to increase after 2005. $PM_{2.5}$ emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions increase through the year 1990, decrease in 1995, hold relatively constant through the year 2010, with increased emissions expected after 2015. Other area-wide source emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 38 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. $PM_{2.5}$ emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

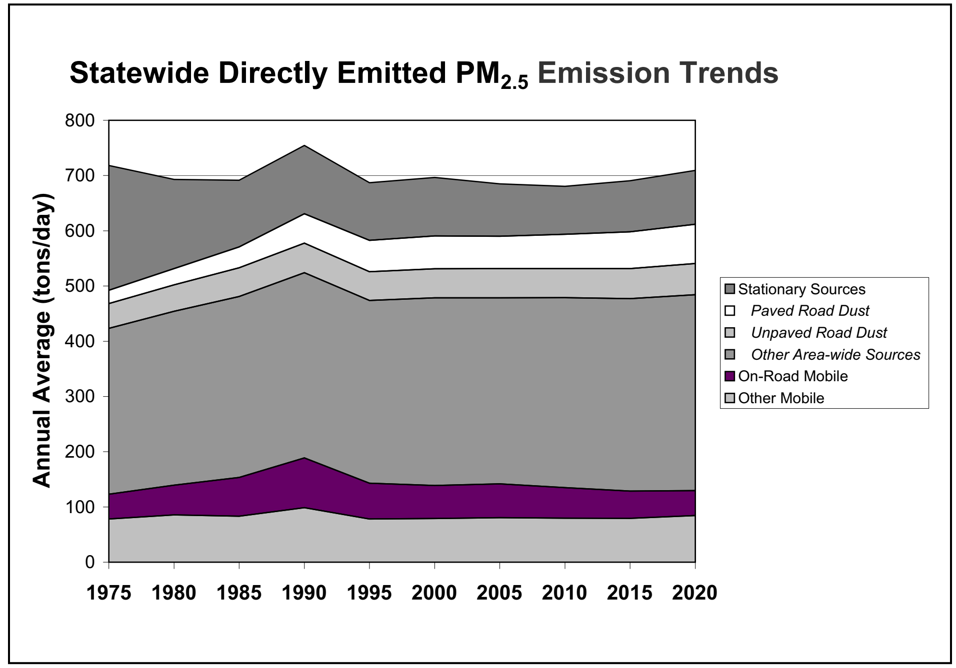

Figure 3-8

The $PM_{2.5}$ emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updated fugitive dust emission estimates and to updated size fractions. The emissions for on-road motor vehicles are higher than in the previous edition and reflect the use of the EMFAC2007 model.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***718***	***693***	***691***	***754***	***687***	***696***	***685***	***680***	***690***	***709***
Stationary Sources	226	161	121	124	104	106	95	87	92	98
Area-wide Sources	369	392	417	442	440	452	448	459	469	482
Paved Road Dust	24	29	38	53	57	60	58	62	67	71
Unpaved Road Dust	45	48	52	54	52	53	53	53	54	56
Other Area-wide Sources	300	315	328	335	331	340	337	344	348	355
On-Road Mobile	45	54	70	90	65	60	61	55	49	45
Gasoline Vehicles	14	11	12	14	16	19	23	25	28	31
Diesel Vehicles	31	42	58	76	49	41	38	30	21	14
Other Mobile	78	85	83	99	78	79	81	80	79	84
Gasoline Fuel	4	5	7	8	8	9	9	11	14	17
Diesel Fuel	55	60	56	65	48	46	42	34	24	17
Other Fuel	19	20	21	25	23	24	29	34	41	51

Table 3-7

Statewide Air Quality - PM_{10}

In contrast to ozone and carbon monoxide, PM_{10} concentrations do not relate as well to growth in population or vehicle usage, and high PM_{10} concentrations do not always occur in high population areas. Activities that contribute directly to high PM_{10} include wood burning, agricultural activities, and driving on unpaved roads. In addition, emissions from stationary sources and motor vehicles form secondary particles that contribute to PM_{10} in many areas. Figure 3-9 shows the statewide annual average for PM_{10} concentrations for a non-desert area. The trend line reflects, for the most part, the South Coast Air Basin. The low value for the annual average in 1988 is due to the limited number of monitors with complete data for this year during the startup of the PM_{10} monitoring network. The period between 1989 and 2005 provides a better indication of trends. Over this period, the three-year average of the annual average shows a decrease of more than 36 percent. However, there is a great deal of variability, especially during the late 1990's. Much of this variability may be due to meteorology rather than changes in emissions. Currently, over 99 percent of Californians live in air basins with concentrations that violate the State PM_{10} standards during at least part of the year. As a result, PM is commanding greater attention.

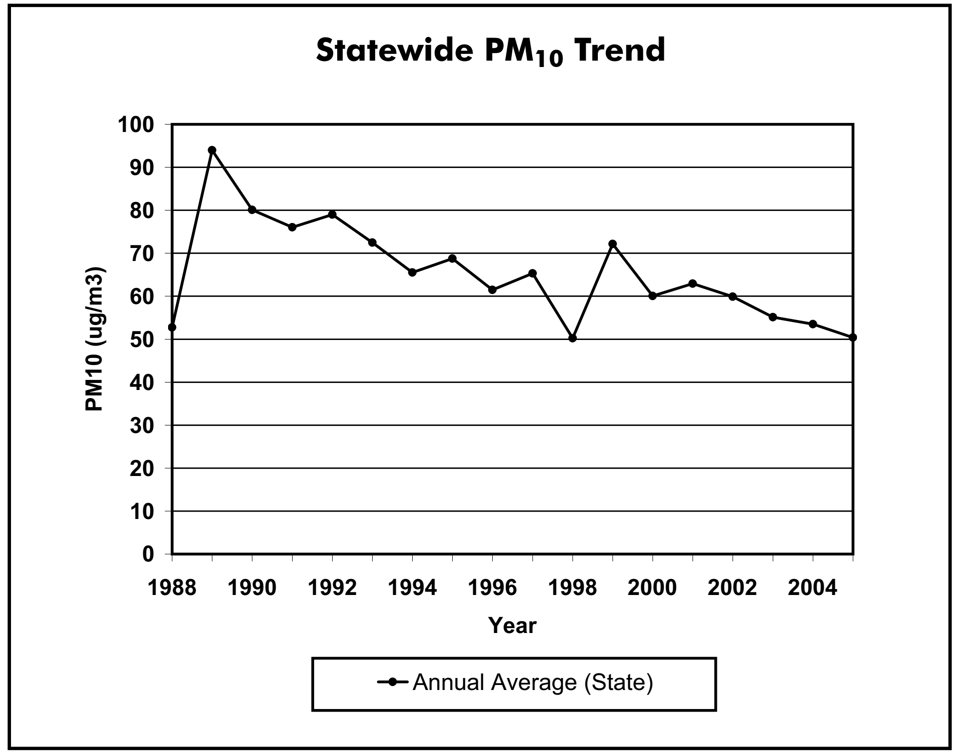

Figure 3-9

In 2003, the Legislature enacted Senate Bill 656 (SB 656) to reduce public exposure to PM_{10} and $PM_{2.5}$. As a first step in the implementation of SB 656, in November 2004, the ARB approved an extensive list of the most readily available, feasible, cost-effective control measures that can be employed by air districts to reduce PM_{10} and $PM_{2.5}$. Recently, air districts adopted implementation schedules for the subset of measures selected to address the nature and severity of their PM problem. The goal is to make progress towards attaining the State and national PM_{10} and $PM_{2.5}$ standards.

Statewide Air Quality - $PM_{2.5}$

Comprehensive monitoring for $PM_{2.5}$ began in 1999, therefore only limited data are available to evaluate statewide trends. Currently, most urban areas in the State, as well as several isolated sub-areas violate the State $PM_{2.5}$ annual average standard. Activities that contribute to high $PM_{2.5}$ concentrations include direct particulate emissions from mobile sources and burning, as well as the formation of $PM_{2.5}$ from the reactions of precursor gases. Attainment plans due in 2008, for the national $PM_{2.5}$ standards, are the focus of current planning efforts.

Figure 3-10 shows the maximum statewide annual average $PM_{2.5}$ concentrations from 1999 through 2005 from the national perspective. The national annual average is also used in the air basin summaries in Chapter 4. The trend line reflects the South Coast Air Basin. Over the seven year period, the annual average shows a decrease of over 32 percent. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends.

As with PM_{10}, $PM_{2.5}$ represents one of the most formidable health challenges in California. The measures adopted as part of SB 656 to reduce PM_{10} and $PM_{2.5}$ (program description can be found on the ARB website at *www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm*), as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$.

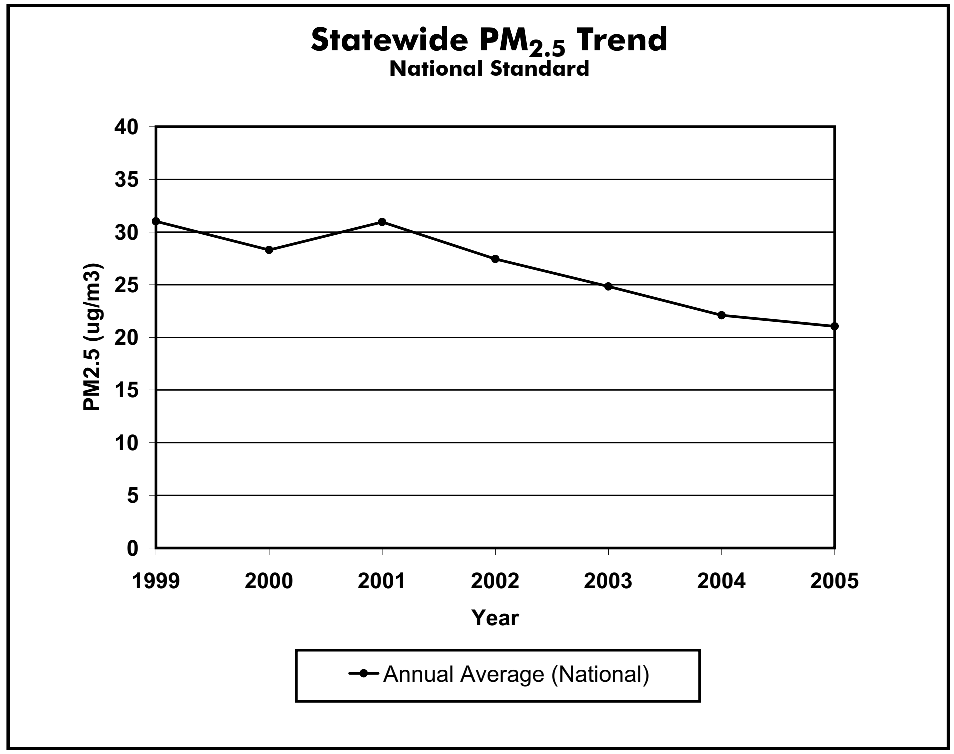

Figure 3-10

Carbon Monoxide (CO)

Emission Trends and Forecasts - Carbon Monoxide

Since 1975, even though VMT have continued to climb, the adoption of more stringent motor vehicle emissions standards has dropped statewide CO emissions from on-road motor vehicles by over 78 percent in 2005. With continued vehicle fleet turnover to cleaner vehicles, including super ultra low emitting vehicles (SULEVs) and zero emission vehicles (ZEVs), and the incorporation of cleaner burning fuels, CO emissions are forecast to continue decreasing through the year 2020. CO emissions from other mobile sources are also projected to decrease through 2010 as more stringent emissions standards are implemented with moderate increases expected after 2010. CO emissions from area-wide sources are expected to increase slightly due to increased waste burning and additional residential fuel combustion resulting from population increases.

The CO emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updates to the statewide waste burning categories.

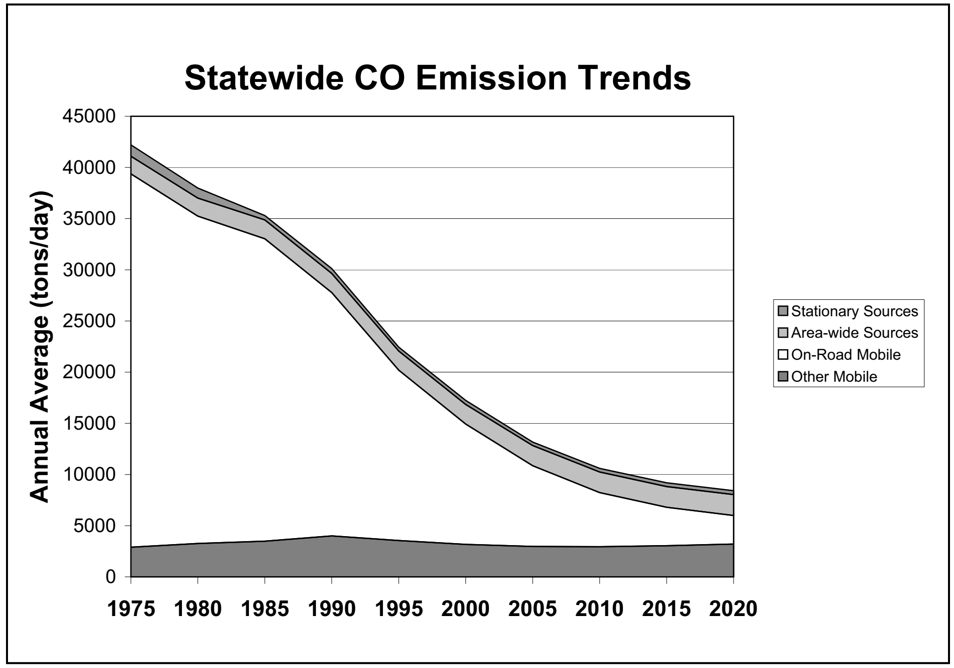

Figure 3-11

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***42207***	***37991***	***35302***	***30119***	***22439***	***17237***	***13167***	***10598***	***9188***	***8419***
Stationary Sources	1113	984	425	478	375	389	340	354	367	379
Area-wide Sources	1716	1763	1847	1866	1873	1917	1965	2006	2021	2043
On-Road Mobile	36483	31987	29546	23775	16644	11762	7895	5290	3759	2793
Gasoline Vehicles	36342	31796	29281	23432	16339	11491	7612	5034	3553	2623
Diesel Vehicles	141	191	265	343	305	271	283	256	207	170
Other Mobile	2894	3257	3483	4001	3546	3169	2967	2947	3041	3205
Gasoline Fuel	2093	2380	2660	3068	2690	2394	2219	2179	2222	2327
Diesel Fuel	396	448	439	529	474	416	364	361	382	410
Other Fuel	405	428	384	404	382	358	383	407	436	467

Table 3-8

Statewide Air Quality - Carbon Monoxide

Similar to ozone, CO concentrations in all areas of California have decreased substantially over the last 20 years, despite significant growth. Statewide, the maximum peak 8-hour indicator declined about 60 percent from 1986 to 2005. California now meets all CO standards.

The introduction of cleaner fuels has helped bring the entire State into attainment. The U.S. EPA recently redesignated the South Coast as attainment, effective June 11, 2007. While cleaner fuels will have a continuing impact on CO levels, additional emission reductions will be needed in the future to keep pace with increases in population and vehicle usage. These reductions will come from continued fleet turn-over, expanded use of LEVs, and measures to promote less polluting modes of transportation.

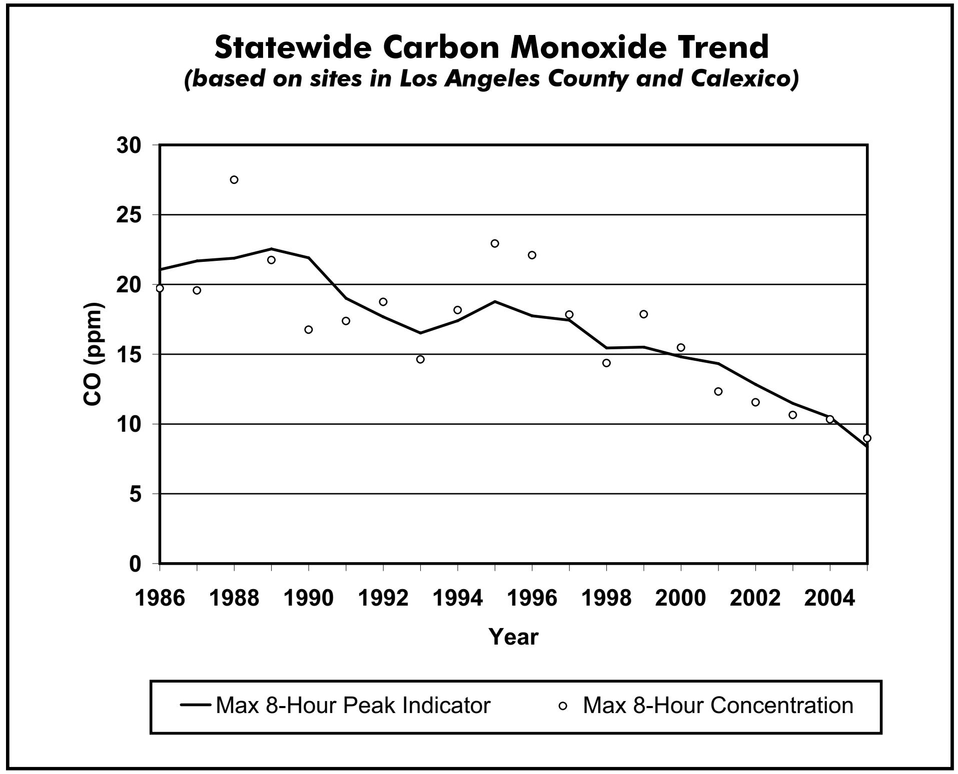

Figure 3-12

Statewide Air Quality - Lead

The decrease in lead emissions and ambient lead concentrations over the past 20 years is California's most dramatic success story. The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent ARB regulations have virtually eliminated all lead from the gasoline now sold in California. All areas of the State are currently designated as attainment for the State lead standard (the U.S. EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, the ARB identified lead as a TAC in 1997.

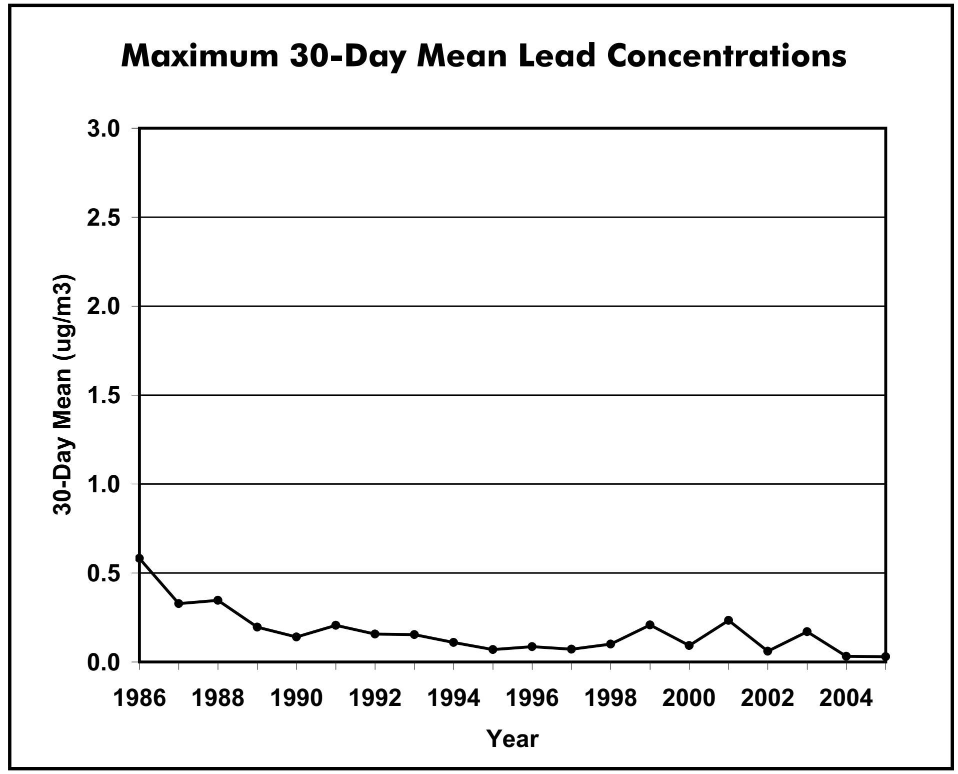

Figure 3-13

Sulfur Dioxide

Emission Trends and Forecasts - Oxides of Sulfur

Oxides of Sulfur (SO_x) are a group of compounds of sulfur and oxygen. A major constituent of SO_x is sulfur dioxide (SO_2). Emissions of SO_x declined tremendously in California between 1975 and 2005. Emissions in 2005 are about 77 percent less than emissions in 1975. Sulfur dioxide emissions from stationary sources decreased between 1975 and 2005 due to improved industrial source controls and switching from fuel oil to natural gas for electric generation and industrial boilers. The SO_x emissions from land-based on- and off-road gasoline and diesel-fueled engines and vehicles have also decreased due to lower sulfur content in the fuel; and recent regulations adopted by the ARB will reduce the sulfur content in fuel used by commercial harbor craft such as tug boats and fishing vessels beginning in 2006. However, as shown in the table below, the SO_x emissions from the "other mobile" categories are expected to increase in the future. This is due to the significant growth in shipping activities predicted for California and the high-sulfur fuels that ocean-going ships typically use. The ARB recently adopted a regulation for fuels used in ship auxiliary engines that will help offset this trend. Substantial reductions in SO_x emissions will occur with implementation of this regulation. In addition, ARB is investigating other options for reversing this trend.

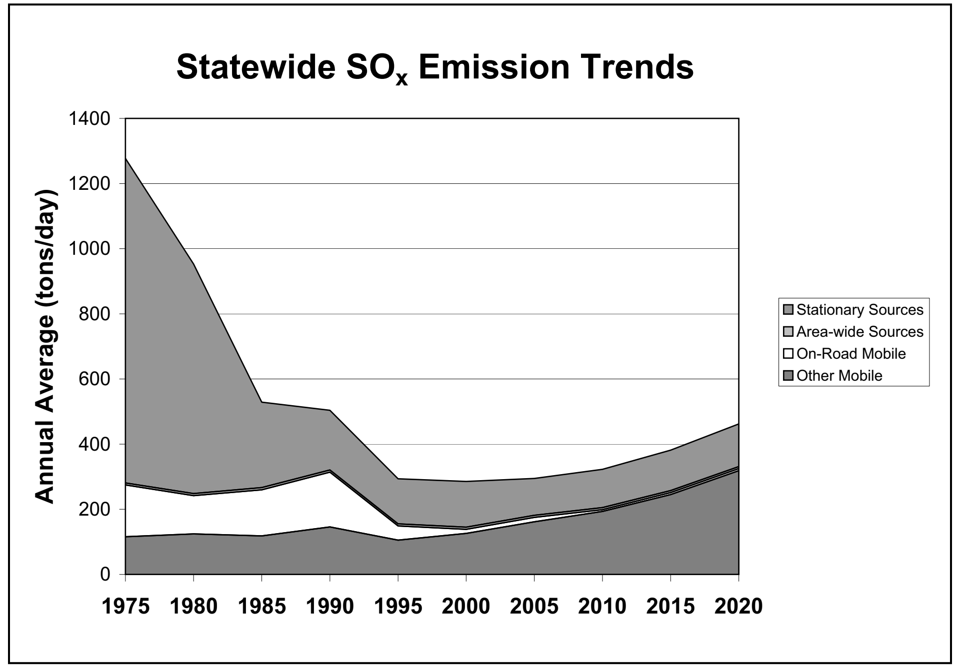

Figure 3-14

Among these options is the Goods Movement Action Plan which was recently adopted.

The SO_x emissions for other mobile sources are lower from 1975 to 1985 when compared to the emissions presented in the previous edition of the Almanac. The lower emissions are due to updates to the ship backcast methodology. Also the emissions for area-wide sources are lower than in the previous edition, due to updates to the statewide burning categories.

SO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1277***	***953***	***529***	***504***	***294***	***285***	***295***	***323***	***382***	***462***
Stationary Sources	996	705	262	183	138	140	113	118	124	131
Area-wide Sources	6	6	7	7	7	7	6	6	6	6
On-Road Mobile	159	118	142	168	43	13	14	6	6	6
Gasoline Vehicles	112	54	56	62	37	5	5	4	5	5
Diesel Vehicles	47	64	85	106	7	7	9	1	1	1
Other Mobile	116	124	118	146	105	126	162	193	245	319
Gasoline Fuel	5	3	4	6	4	1	1	1	1	1
Diesel Fuel	64	74	63	72	15	14	14	3	3	4
Other Fuel	47	47	51	68	87	112	147	189	241	314

Table 3-9

Nitrogen Dioxide

Emission Trends and Forecasts - Oxides of Nitrogen

Nitrogen dioxide (NO_2) is a colorless, tasteless gas that can cause lung damage, chronic lung disease, and respiratory infections. Nitrogen dioxide is a component of NO_x, and its presence in the atmosphere can be correlated with emissions of NO_x. Statewide emissions of NO_x decreased by 28 percent between 1980 and 2005 and are projected to decrease by almost 36 percent from 2005 to 2020 as a result of more stringent emissions standards for stationary source combustion and motor vehicles, and cleaner burning fuels. The introduction of lower emitting vehicles will continue to reduce NO_x emissions.

In the previous edition of the Almanac, the NO_x emissions were lower for on-road motor vehicles from 1995 onward and lower for other mobile sources from 1990 onward. The higher values in this edition reflect the use of the EMFAC2007 and OFFROAD2007 models. Also in this edition, lower NO_x values for area-wide sources after 1995 are mainly the result of updates to the statewide waste burning categories.

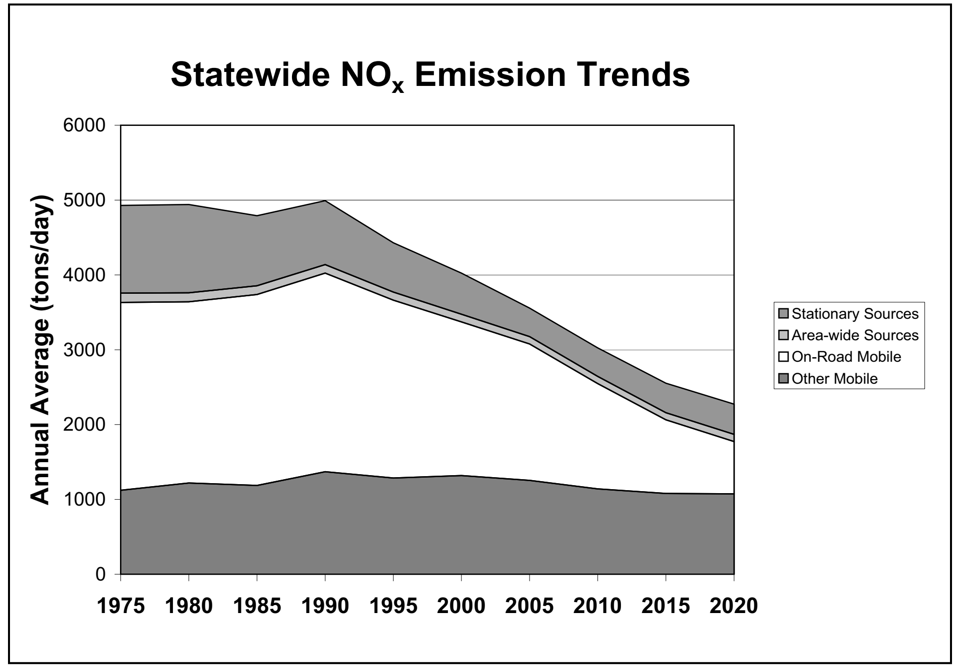

Figure 3-15

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***4928***	***4941***	***4791***	***4991***	***4429***	***4025***	***3556***	***3025***	***2553***	***2273***
Stationary Sources	1172	1180	936	853	659	551	381	381	394	404
Area-wide Sources	125	121	117	114	108	102	99	96	95	97
On-Road Mobile	2510	2421	2552	2654	2377	2053	1823	1407	984	699
Gasoline Vehicles	2197	2014	1958	1839	1574	1160	754	504	359	263
Diesel Vehicles	312	407	593	815	803	893	1069	904	625	435
Other Mobile	1122	1219	1186	1370	1286	1319	1254	1140	1079	1074
Gasoline Fuel	52	57	62	72	70	70	76	68	64	64
Diesel Fuel	917	1002	954	1095	980	966	854	696	567	464
Other Fuel	154	160	169	202	237	284	325	376	448	546

Table 3-10

Statewide Air Quality - Nitrogen Dioxide

NO_x emissions are a by-product of combustion from both mobile and stationary sources, and they contribute to ambient nitrogen dioxide (NO_2) concentrations. Since 1986, maximum NO_2 concentrations have decreased over 58 percent, due primarily to the implementation of tighter controls on both mobile and stationary sources. Although many of these controls were implemented to reduce ozone, they also benefited NO_2. All areas of California are currently designated as attainment for the State NO_2 standard and unclassified/attainment for the national NO_2 standard. Projections show NO_x emissions will continue to decline, thereby assuring continued attainment.

ARB revised the State 1-hour and adopted a new annual NO_2 standard in February 2007. These new standards are not final until they are approved by the Office of Administrative Law.

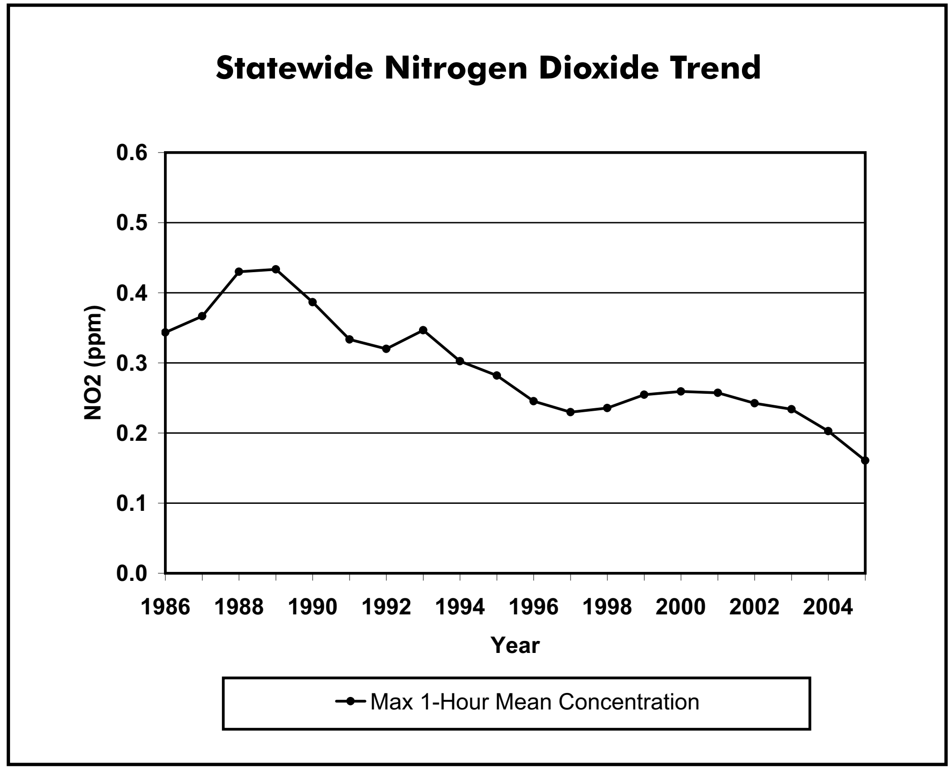

Figure 3-16

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Chapter 4

Air Basin Trends and Forecasts -- Criteria Pollutants

Introduction

This chapter provides a look at emissions and air quality in California's five major air basins (data for individual counties are provided in Appendix A). Emissions data include past trends and projections of future emissions levels. The air quality statistics include values reflecting both the State and national ambient air quality standards. Below we will briefly discuss some of the statistics used to characterize ozone and PM air quality in this chapter.

In addition to maximum concentrations and number of days above the standards, the ozone statistics include the peak indicator and the three-year average of the 4th highest 8-hour concentration. The peak indicator represents the maximum concentration expected to be exceeded no more than once per year, on average, based on the distribution of data at a particular monitoring site. Because it is based on a robust statistical calculation using three years of data, the peak indicator is relatively stable and provides a trend indicator that is not highly influenced by year-to-year changes in weather. The 1-hour and 8-hour peak indicators are calculated from measured data and relate to State standards. In contrast, the three-year average of the 4th highest concentration is related to the national 8-hour ozone standard. (Please note that a different indicator was used for determining compliance with the federal 1-hour ozone standard.) These statistics are reported for the end year of the three year period. For example, the 2005 peak indicator reflects data for the years 2003 through 2005.

The peak indicator and the three-year average of the 4th high are generally called "design values" and are the concentrations that are compared to the standard for the purpose of determining attainment status. However, values for these statistics that are included in this almanac may not satisfy data completeness requirements or the boundaries of a nonattainment area, which may differ from county or air basin boundaries. Data conforming to the established design value requirements are available for the national 8-hour ozone standard on the web at *www.arb.ca.gov/airqualitytoday* under "recent year's ozone air quality." Furthermore, when evaluating these statistics, keep in mind that they represent data for a three-year period.

Some of the PM statistics included in this chapter also relate to the State and national standards and differ from one another because the requirements of the standards are different. For example, there is a maximum 24-hour $PM_{2.5}$ concentration listed for State purposes and another for national purposes. During some years or in some areas the two numbers may differ. These differences occur because the monitors acceptable for the two standards are different. The situation is similar for the State and national annual average. Both reflect a summary statistic based on one year of data. However in this case, both the acceptable monitors differ and the calculation methods differ. Finally, it is important to note that air quality statistics based on a single year of data (for example, the yearly count of days above the standard) can fluctuate from year-to-year because of variations in weather. As a result, this almanac compares three-year averages when characterizing the percentage increase or decrease in days above the standard. In this case, the number of exceedance days for 1986 (which represents an average of 1984, 1985, and 1986) is then compared to the 2005 value (which represents an average of 2003, 2004, and 2005), giving a much more stable indicator of long-term progress.

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South Coast Air Basin

Introduction - Area Description

The South Coast Air Basin is California's largest metropolitan region. The area includes the southern two-thirds of Los Angeles County, all of Orange County, and the western urbanized portions of Riverside and San Bernardino counties. It covers a total of 6,480 square miles, is home to more than 43 percent of California's population, and generates about 29 percent of the State's total criteria pollutant emissions.

The South Coast Air Basin generally forms a lowland plain, bounded by the Pacific Ocean on the west and by mountains on the other three sides. In terms of air pollution potential, there are probably few areas less suited for urban development. The warm sunny weather associated with a persistent high pressure system is conducive to the formation of ozone, commonly referred to as "smog." The problem is further aggravated by the surrounding mountains, frequent low inversion heights, and stagnant air conditions. All of these factors act together to trap pollutants in the air basin.

Pollutant concentrations in parts of the South Coast Air Basin are among the highest in the nation. As a result, controlling the contributing emission sources poses a great challenge to State and local air pollution control agencies.

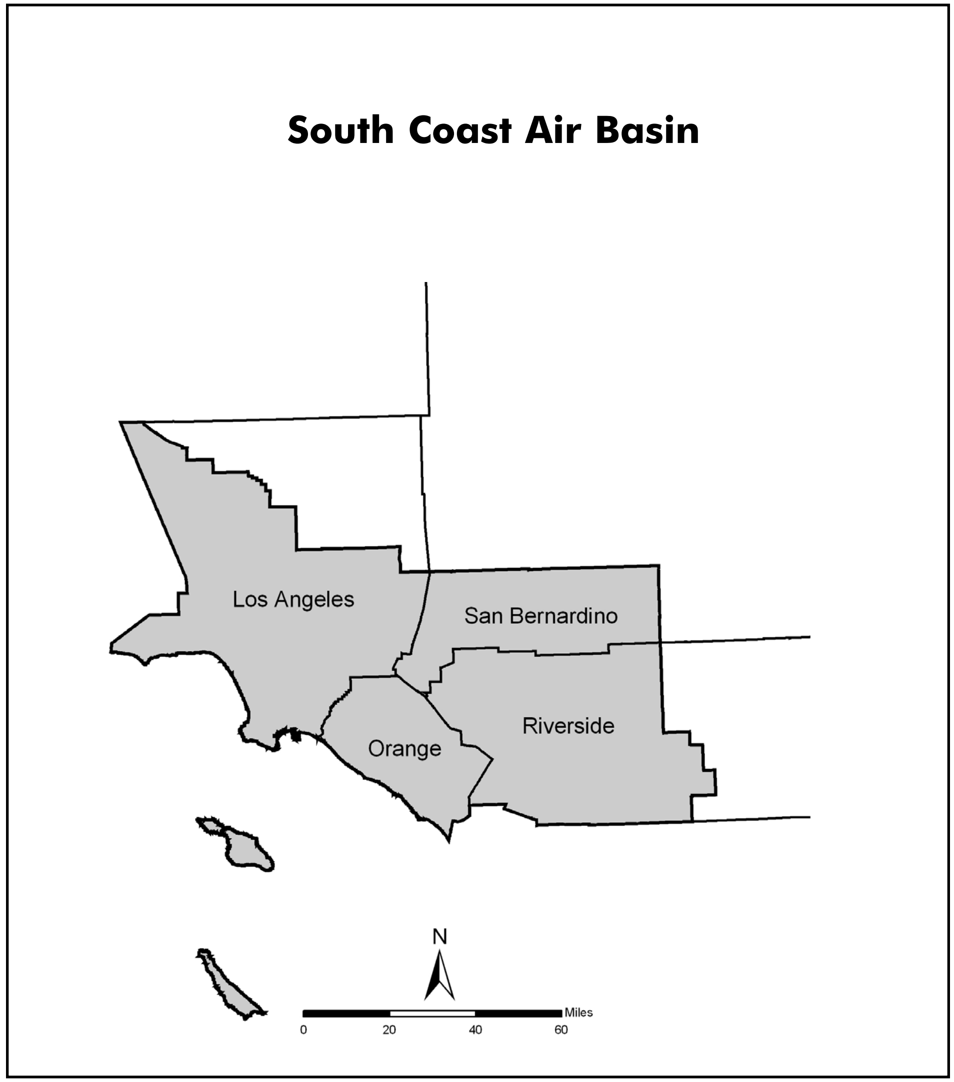


Figure 4-1

South Coast Air Basin

Emission Trends and Forecasts

Overall, since 1975 the emission levels for CO and the ozone precursors NO_x and ROG have been decreasing in the South Coast Air Basin and are projected to continue decreasing through 2020. The decreases are predominantly due to motor vehicle controls and reductions in evaporative emissions. In the South Coast Air Basin, on-road motor vehicles are the largest contributors to CO, NO_x, and ROG emissions. Other mobile sources are also significant contributors to CO and NO_x emissions. The emission levels for SO_x have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The increase in SO_x emissions from 2005 onward is due to predicted growth in shipping activities.

SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at *www.arb.ca.gov/planning/sip/sip.htm*.

South Coast Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_x	1693	1532	1564	1561	1335	1180	999	755	600	493
ROG	2748	2312	2246	1801	1361	1080	729	569	518	496
PM_{10}	224	233	254	357	346	348	313	286	296	306
$PM_{2.5}$	126	115	114	131	114	115	112	103	103	105
SO_x	409	194	101	77	52	43	46	48	52	57
CO	16544	13605	13148	10750	7778	5648	4129	2950	2472	2198

Table 4-1

South Coast Air Basin

Population and VMT

Both population and the daily VMT grew from 1980 to 2005 and are projected to continue to grow at high rates in the South Coast Air Basin from 2005 to 2020. While high growth rates are often associated with corresponding increases in emissions and pollutant concentrations, aggressive emission control programs in the South Coast Air Basin have resulted in emission decreases and a continuing improvement in air quality.

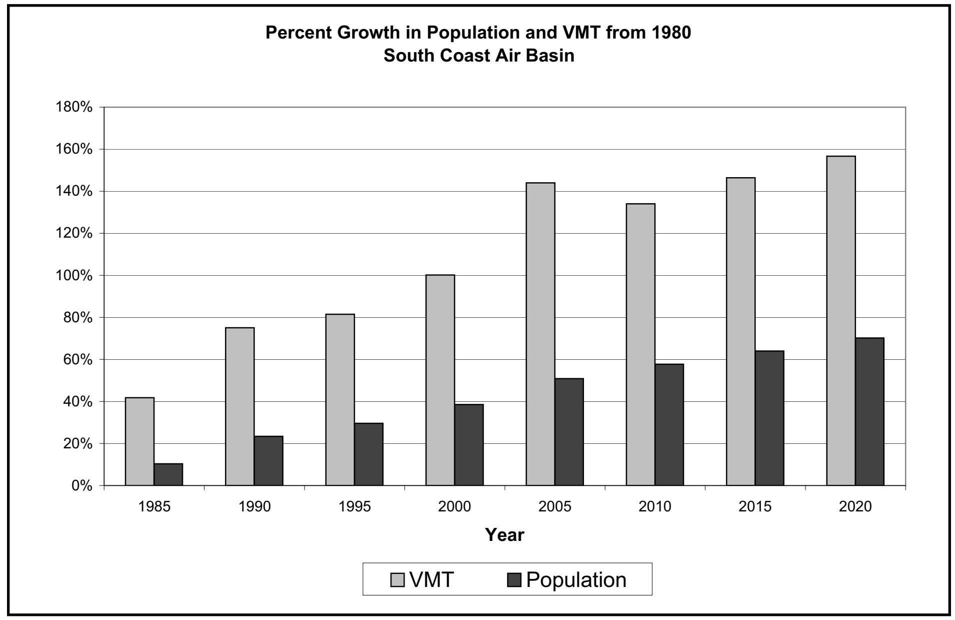


Figure 4-2

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	10604663	11698030	13083594	13745292	14687872	15996422	16727861	17389313	18050763
Avg. Daily VMT/1000	161397	228818	282561	292884	323009	393767	377734	397696	414267

Table 4-2

South Coast Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO_x and ROG in the South Coast Air Basin are generally following the statewide downward trend. Motor vehicle miles traveled in the basin are increasing, but NO_x and ROG emissions from on-road vehicles are dropping as more stringent vehicle emission standards have been adopted. These decreases in NO_x and ROG emissions are projected to continue between 2000 and 2020, as even more stringent motor vehicle standards are implemented and as newer, lower-emitting vehicles become a larger percentage of the fleet. NO_x emissions from electric utilities in the air basin have declined substantially since 1975, despite a nationwide increase in emissions from electric utilities in the same time period. These large reductions are primarily due to increased use of natural gas as the principal fuel for power plants, and control rules that limit NO_x emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1693***	***1532***	***1564***	***1561***	***1335***	***1180***	***999***	***755***	***600***	***493***
Stationary Sources	306	265	229	181	130	112	60	55	51	51
Area-wide Sources	60	54	49	42	35	30	27	23	22	23
On-Road Mobile	998	880	955	953	831	692	586	400	285	204
Gasoline Vehicles	927	777	796	725	616	455	295	178	127	92
Diesel Vehicles	71	103	159	228	215	237	291	222	158	111
Other Mobile	329	333	331	385	338	345	327	276	241	216
Gasoline Fuel	27	27	29	32	28	29	28	24	22	21
Diesel Fuel	268	271	267	314	265	266	241	194	155	123
Other Fuel	34	35	35	39	45	51	58	58	64	72

Table 4-3

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***2748***	***2312***	***2246***	***1801***	***1361***	***1080***	***729***	***569***	***518***	***496***
Stationary Sources	599	494	509	455	298	259	101	100	105	110
Area-wide Sources	177	188	204	223	192	185	157	147	152	158
On-Road Mobile	1734	1382	1269	875	650	438	297	183	139	113
Gasoline Vehicles	1725	1368	1250	852	635	425	280	169	129	105
Diesel Vehicles	9	13	19	23	15	13	17	14	11	8
Other Mobile	238	248	264	248	221	198	173	139	121	115
Gasoline Fuel	183	192	208	186	164	151	130	104	92	88
Diesel Fuel	40	40	40	46	41	39	34	27	20	17
Other Fuel	15	15	15	16	16	9	9	8	10	11

Table 4-4

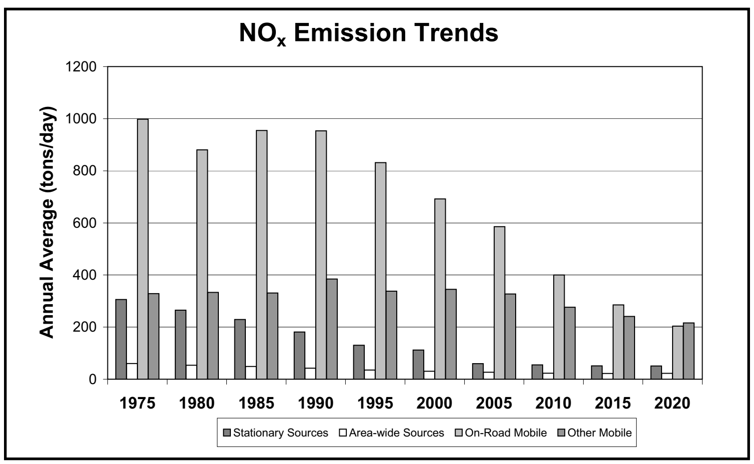


Figure 4-3

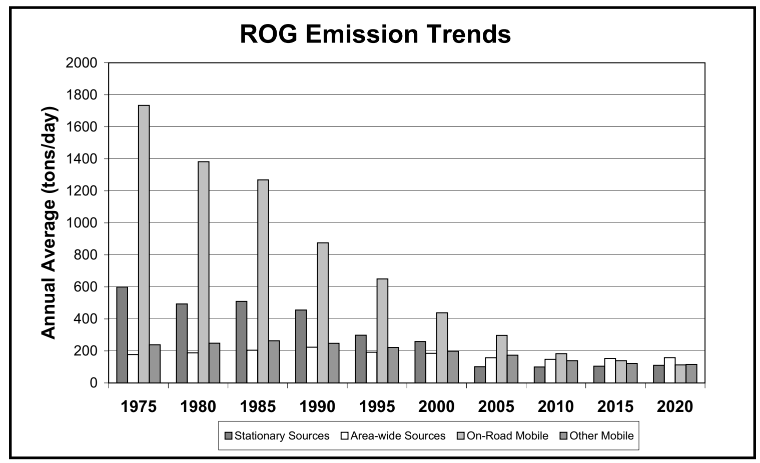


Figure 4-4

South Coast Air Basin

Ozone Air Quality Trend

Ozone air quality in the South Coast Air Basin has improved substantially over the last 30 years. During the 1960s, maximum 1-hour concentrations were above 0.60 ppm. Today, the maximum measured concentrations are less than one-third of that. The 2005 ozone season in the South Coast was on a par with 2004, with some statistics showing considerable decreases. The 2005 peak 8-hour indicator value was almost 42 percent lower than the 1986 value. The 2006 three-year average of the maximum 8-hour concentration was nearly 40 percent lower than 1988. The number of days above the standards has also declined dramatically, and the trend for 1-hour ozone is similar to that for 8-hour.

Although ozone has improved substantially over time, progress has leveled off during the last several years. This may be attributable to changes in the mix and reactivity of precursor emissions in the South Coast. While the basinwide trends show a slower rate of improvement during recent years, progress in some subregions of the Basin (for example, the coastal area and some of the inland valley areas) is still occurring. Continuing implementation of the aggressive emissions control measures will ensure continued progress throughout the Basin.

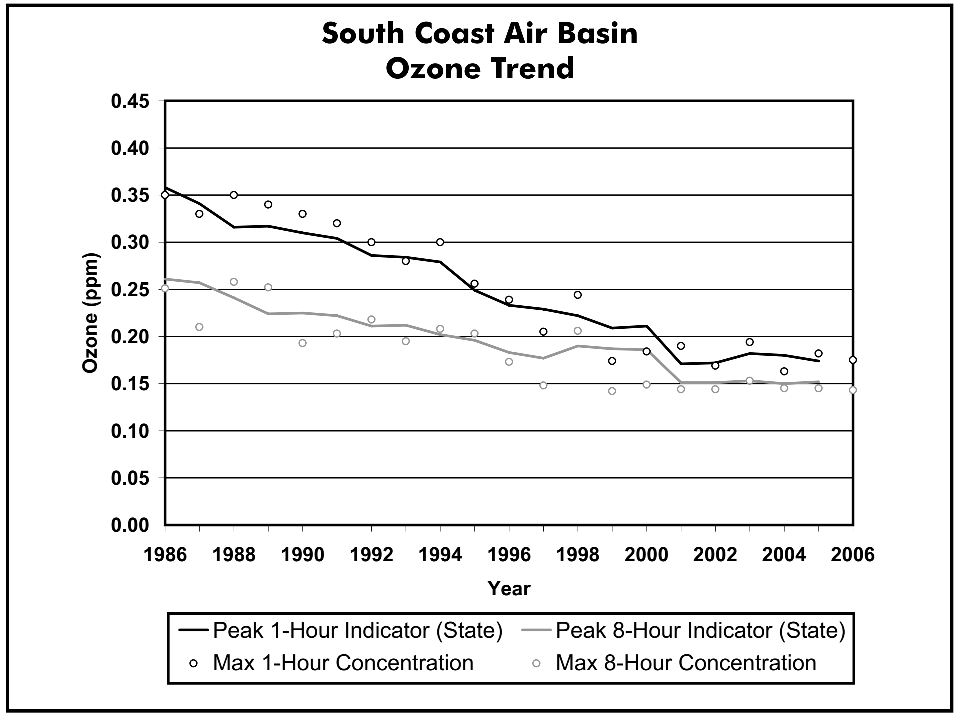


Figure 4-5

The ARB has identified the South Coast Air Basin as a transport contributor to several downwind areas — Mojave Desert Air Basin, Salton Sea Air Basin, San Diego Air Basin, and South Central Coast Air Basin. As ozone concentrations in the South Coast Air Basin decline further, the transport impact on the downwind areas should also decrease.

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[1]
Peak 8-Hour Indicator (State)	0.261	0.257	0.241	0.224	0.225	0.222	0.211	0.212	0.202	0.196	0.183	0.177	0.190	0.187	0.186	0.151	0.151	0.153	0.150	0.152	
Avg. of 4th High 8-Hr. in 3 Yrs	0.222	0.217	0.205	0.192	0.186	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127	0.127	
Peak 1-Hour Indicator (State)	0.358	0.341	0.316	0.317	0.310	0.304	0.286	0.284	0.279	0.249	0.233	0.229	0.222	0.209	0.211	0.171	0.172	0.182	0.180	0.174	
4th High 1-Hr. in 3 Yrs[2]	0.360	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.231	0.215	0.217	0.211	0.211	0.184	0.169	0.184	0.171	0.173	
Max. 8-Hr. Concentration	0.251	0.210	0.258	0.252	0.193	0.203	0.218	0.195	0.208	0.203	0.173	0.148	0.206	0.142	0.149	0.144	0.144	0.153	0.145	0.145	0.143
Maximum 1-Hr. Concentration	0.350	0.330	0.350	0.340	0.330	0.320	0.300	0.280	0.300	0.256	0.239	0.205	0.244	0.174	0.184	0.190	0.169	0.194	0.163	0.182	0.175
Days Above State 8-Hr. Std.	221	198	215	221	192	188	199	205	176	173	165	175	139	146	147	154	147	153	152	138	130
Days Above Nat. 8-Hr. Std.	191	179	194	181	161	160	173	161	148	120	115	118	93	93	94	92	96	109	88	83	86
Days Above State 1-Hr. Std.	217	196	216	211	185	184	190	185	165	153	141	144	107	111	115	121	116	125	105	99	102

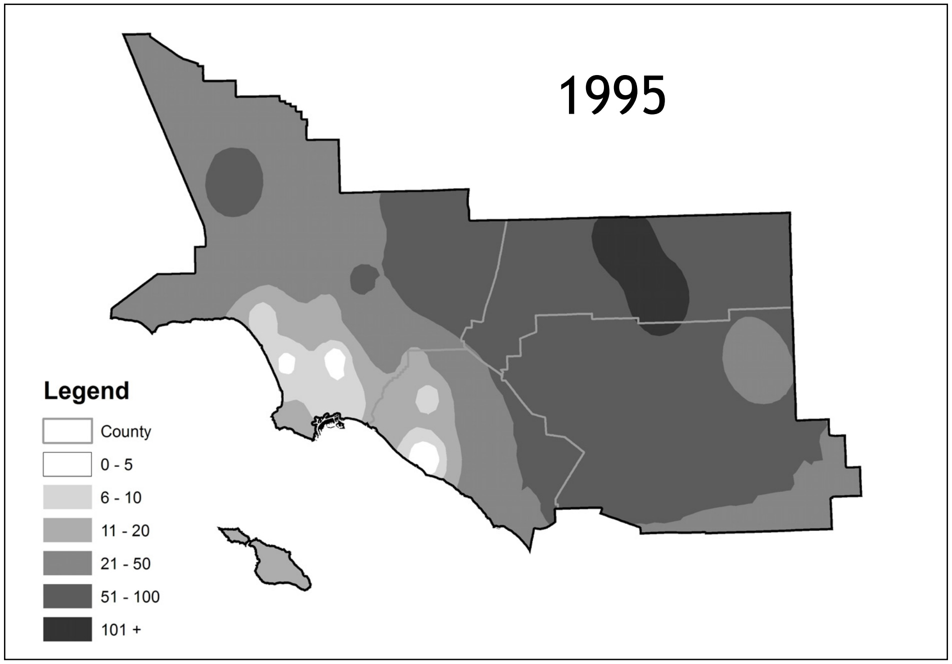
[1] Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

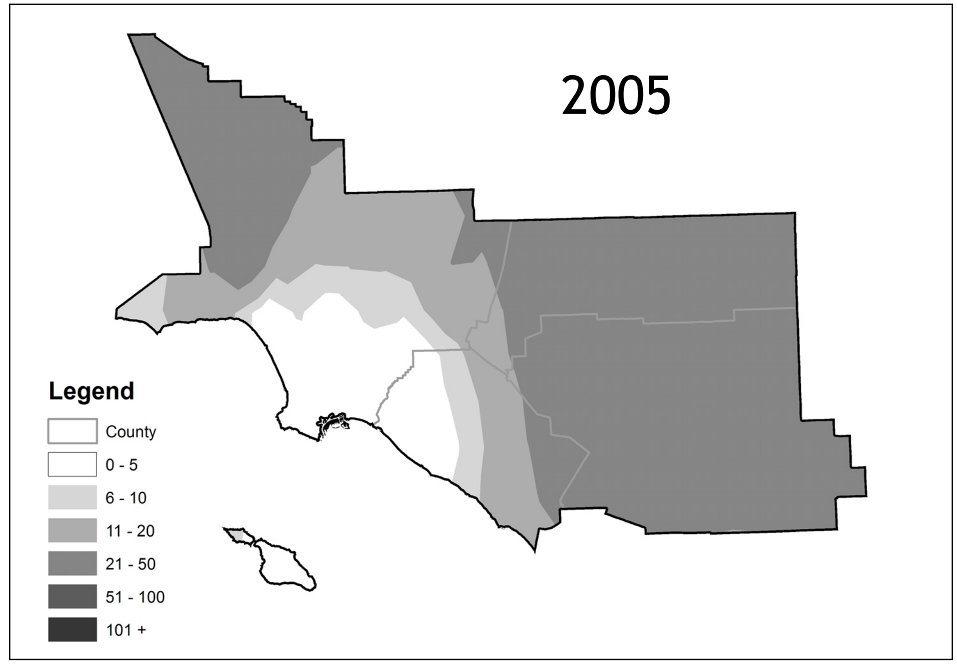
[2] The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-5

South Coast Air Basin

Ozone Contour Maps - 3-year Average of National 8-Hour Exceedance Days





NOTE: Values used in these maps are for long-term sites only. Long-term sites are used ito more accurately represent a trend over a period, by comparing the same or similar sites over a long period.

Figure 4-6

Figure 4-7

Another way to look at ozone air quality is to evaluate how widespread the problem is within a region. The maps on this page illustrate how the number of days exceeding the national 8-hour standard have changed across the South Coast Air Basin over the last decade. Three-year averages are used to help mitigate the impact of changes in meteorology.

Overall, the two maps show a substantial reduction in the number of exceedance days over the last 10 years. During the 1995 time period, about half of the South Coast had more than 50 exceedance days, with more than 100 days in the worst area. This is equivalent to more than three months during a year with ozone concentrations above the level of the standard. The coastal areas were cleaner than the inland areas. However, only small, isolated portions of the Basin had ten or fewer exceedance days.

The 2005 map shows a dramatic expansion of clean areas, especially those in the range of zero to five exceedance days. These are the areas that currently meet the national standard, and they include about a third of Orange County and a fourth of Los Angeles County, where the majority of the Basin population lives and works. The areas with 6 to 10 and 11 to 20 exceedance days has also grown substantially. Ozone air quality in the inland areas is still worse than in areas nearer the coast. Even so, the areas with the highest number of exceedance days are limited to the northwestern portion of Los Angeles County and portions of Riverside and San Bernardino counties. However, despite the dramatic improvements in these areas, a large percentage of the basinwide population still experiences more than 50 exceedance days per year.

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South Coast Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} have been increasing in the South Coast Air Basin since 1975. A decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from construction and demolition operations, and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia (secondary PM). The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 65 percent of the ambient PM_{10} in the South Coast Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***224***	***233***	***254***	***357***	***346***	***348***	***313***	***286***	***296***	***306***
Stationary Sources	61	45	33	50	45	50	51	22	23	25
Area-wide Sources	122	145	172	249	255	253	213	219	231	240
On-Road Mobile	18	20	25	32	25	24	27	25	24	24
Gasoline Vehicles	10	8	9	11	11	13	16	16	18	20
Diesel Vehicles	8	12	16	21	13	11	11	8	6	4
Other Mobile	24	24	23	27	21	21	21	20	18	17
Gasoline Fuel	2	3	3	4	4	4	4	5	6	7
Diesel Fuel	19	19	18	21	15	15	14	11	8	5
Other Fuel	2	2	2	3	3	2	3	4	5	5

Table 4-6

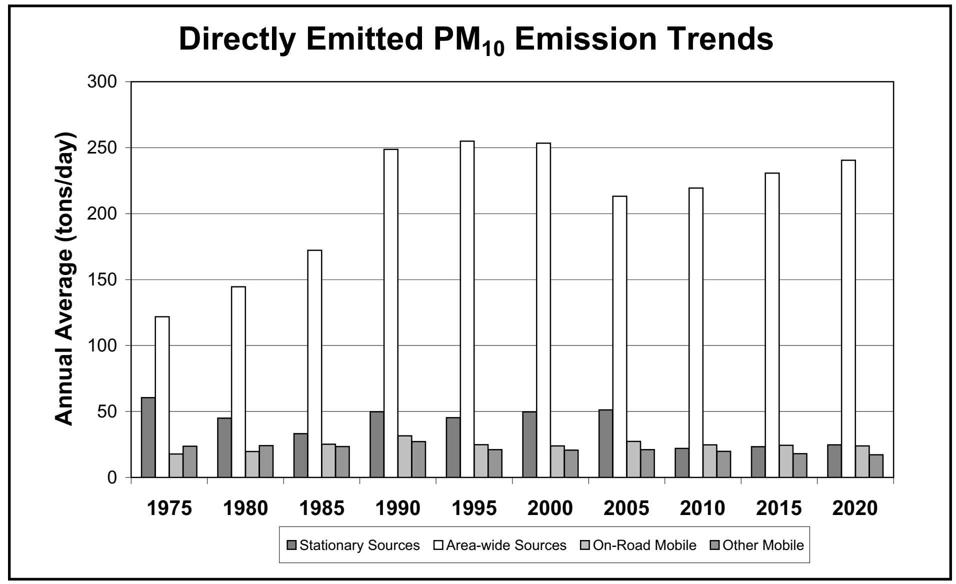


Figure 4-8

South Coast Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ have decreased slightly in the South Coast Air Basin since 1975. Stationary source emissions have been decreasing, while area-wide emissions have been increasing. A more significant decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from construction and demolition operations, and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 40 percent of the ambient $PM_{2.5}$ in the South Coast Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***126***	***115***	***114***	***131***	***114***	***115***	***112***	***103***	***103***	***105***
Stationary Sources	53	35	24	29	22	23	22	14	15	15
Area-wide Sources	38	43	49	52	54	56	51	53	56	58
On-Road Mobile	13	15	20	25	19	18	20	18	17	16
Gasoline Vehicles	6	5	5	6	7	8	10	10	12	13
Diesel Vehicles	7	11	15	19	12	10	10	8	5	4
Other Mobile	22	22	21	25	19	19	19	18	16	15
Gasoline Fuel	2	2	2	3	3	3	3	4	4	5
Diesel Fuel	18	18	17	19	14	14	13	10	7	5
Other Fuel	2	2	2	2	3	2	3	4	5	5

Table 4-7

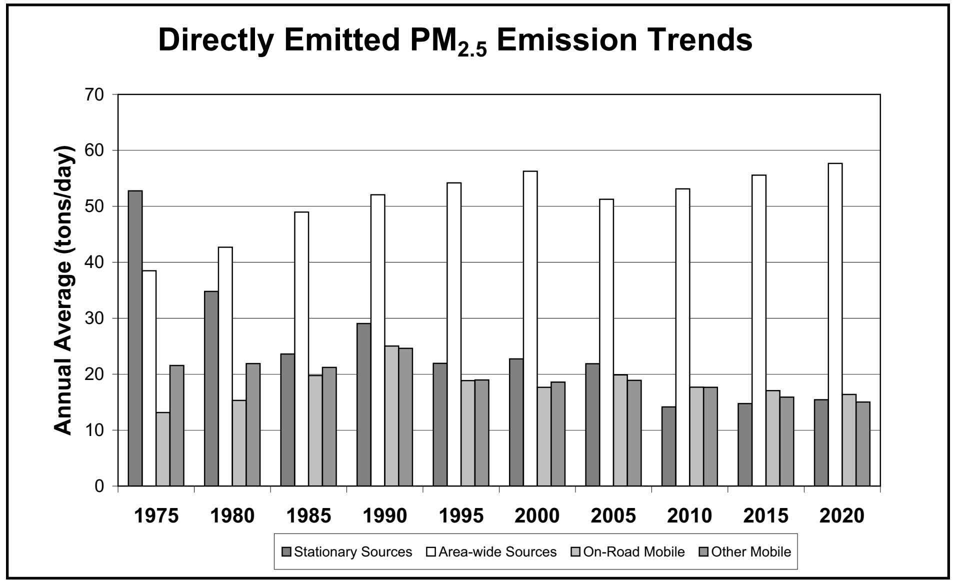


Figure 4-9

South Coast Air Basin

PM_{10} Air Quality Trend

As with other pollutants, the PM_{10} statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased about 36 percent. Although the values in the late 1990's show some variability, this is probably due to meteorology rather than a change in emissions. Despite the overall decrease, ambient concentrations still exceed the State annual and 24-hour PM_{10} standards. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM_{10} standards has also shown an overall drop. During 1989, there were 305 calculated days above the State standard and 32 calculated days above the national standard. By 2005, there were 198 calculated State standard exceedance days and no national standard exceedance days.

Despite these decreases, PM_{10} continues to pose a significant problem in the South Coast Air Basin. While emission controls implemented for ozone will also benefit PM_{10}, more controls aimed specifically at reducing PM_{10} will be needed to reach attainment.

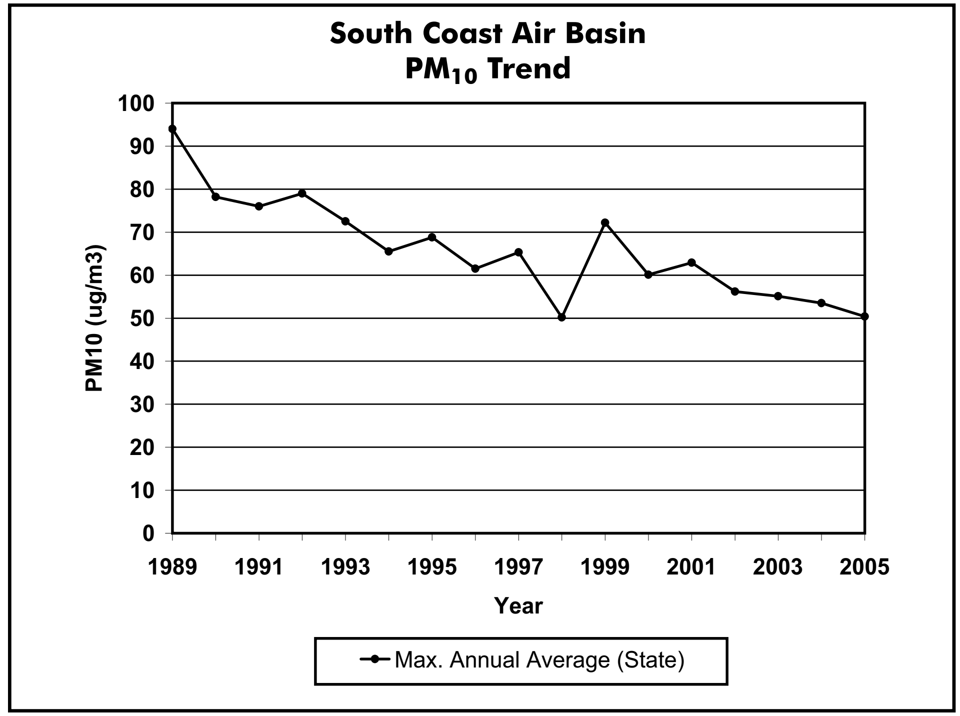


Figure 4-10

PM_{10} (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			287	271	475	179	649	231	161	219	162	208	116	183	139	219	126	159	133	131
Max. 24-Hr. Concentration (Nat)			287	271	475	179	649	231	210	219	185	208	116	183	139	219	130	164	137	131
Max. Annual Average (State)				94.0	78.2	76.0	79.0	72.5	65.5	68.8	61.5	65.3	50.2	72.2	60.1	62.9	56.2	55.1	53.5	50.4
Max. Annual Average (Nat)			103.7	93.0	78.2	76.1	79.0	72.5	65.5	68.8	62.8	65.6	58.7	72.2	59.1	63.3	58.1	55.6	54.8	51.8
Calc Days Above State 24-Hr Std				305	275	250	243	251	244	226	251	257	171	261	248	240	228	201	210	198
Calc Days Above Nat 24-Hr Std				32	33	15	24	12	4	8	7	17	0	6	0	5	0	6	0	0

Table 4-8

South Coast Air Basin

$PM_{2.5}$ Air Quality Trend

Figure 4-11 shows the annual average $PM_{2.5}$ concentrations (national) in the South Coast Air Basin from 1999 through 2004. Overall, concentrations were relatively stable during the first three years. However, over the last four years the annual average concentrations have decreased. The State annual average concentrations also show a declining trend, although the trend looks less pronounced, due to differences in State and national monitoring methods. The 98th percentile of 24 hour $PM_{2.5}$ concentrations has also declined within the last seven years. The South Coast Air Basin is currently designated as nonattainment for the State and national $PM_{2.5}$ standards. Measures adopted as part of the upcoming $PM_{2.5}$ SIP, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

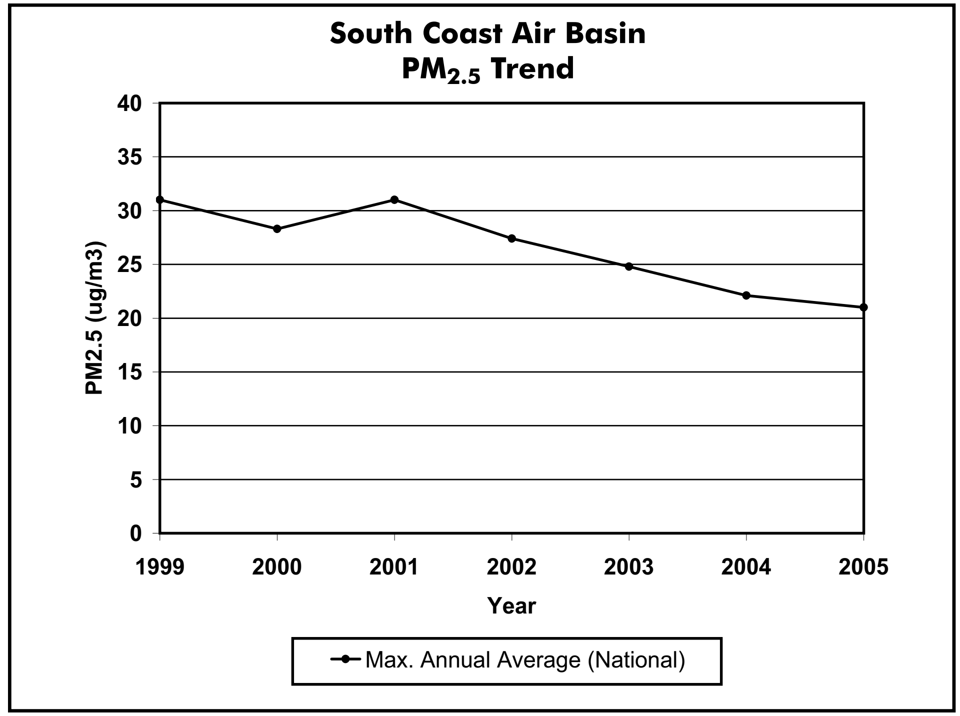


Figure 4-11

$PM_{2.5}$ (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														121.4	119.6	104.0	82.1	121.2	93.8	132.6
Max. 24-Hr. Concentration (Nat)														121.4	119.6	98.0	82.1	121.2	93.8	132.6
98th Percentile of 24-Hr Conc.														85.6	83.0	74.3	66.3	76.6	72.4	58.3
Annual Average (State)															24.0	25.0	25.8	24.8	16.6	21.0
Annual Average (Nat)														31.0	28.3	31.0	27.4	24.8	22.1	21.0

Table 4-9

South Coast Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been trending downward since 1975 in the South Coast Air Basin even though motor vehicle miles traveled have increased and industrial activity has grown. On-road motor vehicle controls are primarily responsible for this decline in emissions of CO. Stationary source emissions decreased during the 1970s and 1980s as a result of a decline in the manufacture of carbon black (a material used in the manufacture of tires) and steel in the South Coast Air Basin. CO emissions from other mobile sources have declined since 1990 and are projected to decline through 2010 as more stringent emission standards are adopted.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***16544***	***13605***	***13148***	***10750***	***7778***	***5648***	***4129***	***2950***	***2472***	***2198***
Stationary Sources	288	278	66	92	60	45	55	55	55	57
Area-wide Sources	85	70	106	70	79	104	109	112	115	119
On-Road Mobile	14958	11988	11627	9103	6385	4414	2979	1818	1306	973
Gasoline Vehicles	14926	11940	11558	9013	6307	4350	2905	1756	1254	929
Diesel Vehicles	33	48	69	90	78	64	73	62	52	43
Other Mobile	1213	1269	1348	1485	1254	1085	985	964	995	1049
Gasoline Fuel	957	1011	1090	1198	987	858	769	740	744	771
Diesel Fuel	132	135	135	161	137	123	110	118	137	154
Other Fuel	123	123	124	126	130	103	107	106	115	124

Table 4-10

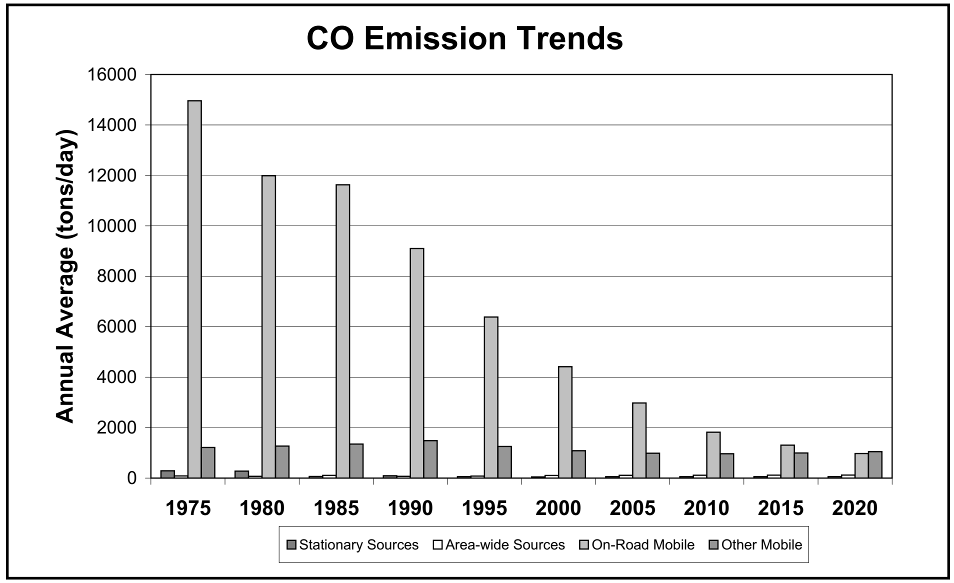


Figure 4-12

South Coast Air Basin

Carbon Monoxide Air Quality Trend

Carbon monoxide concentrations in the South Coast Air Basin have decreased markedly — a total decrease of more than 66 percent in the peak 8-hour indicator since 1986. The number of exceedance days has also declined. During 1986 there were 58 days above the State standard and 49 days above the national standard. However, since 2003, there were no exceedance days for either standard.

The entire South Coast Air Basin is now designated as attainment for the national CO standards effective June 11, 2007. Ongoing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations.

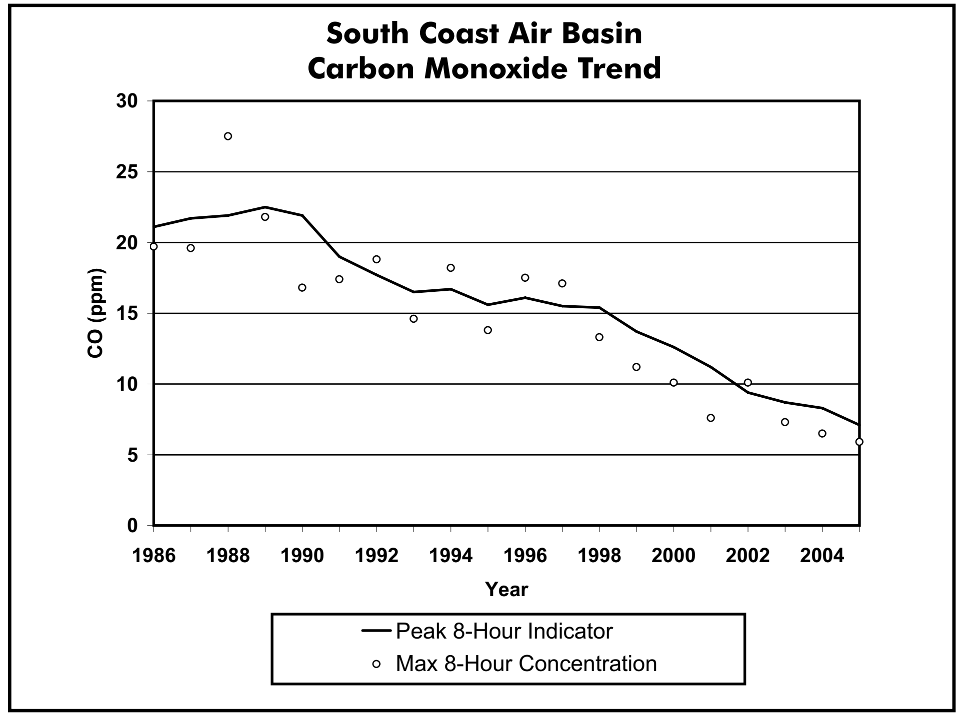


Figure 4-13

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator (State)	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3	7.1
Max. 1-Hr. Concentration	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.8	11.7	15.8	12.2	10.4	7.4
Max. 8-Hr. Concentration (State)	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5	5.9
Days Above State 8-Hr. Std.	58	50	73	71	50	51	39	29	27	17	26	18	13	11	6	0	1	0	0	0
Days Above Nat. 8-Hr. Std.	49	40	65	67	42	41	34	19	19	14	19	13	10	7	3	0	1	0	0	0

Table 4-11

South Coast Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Oxides of nitrogen (NO_x) and nitrogen dioxide (NO_2) emissions in the South Coast Air Basin have been trending downward since 1985. This decline should continue as more stringent motor vehicle and stationary source emission standards are adopted and implemented.

NO_x Emission Trends (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
All Sources	***1693***	***1532***	***1564***	***1561***	***1335***	***1180***	***999***	***755***	***600***	***493***
Stationary Sources	306	265	229	181	130	112	60	55	51	51
Area-wide Sources	60	54	49	42	35	30	27	23	22	23
On-Road Mobile	998	880	955	953	831	692	586	400	285	204
Gasoline Vehicles	927	777	796	725	616	455	295	178	127	92
Diesel Vehicles	71	103	159	228	215	237	291	222	158	111
Other Mobile	329	333	331	385	338	345	327	276	241	216
Gasoline Fuel	27	27	29	32	28	29	28	24	22	21
Diesel Fuel	268	271	267	314	265	266	241	194	155	123
Other Fuel	34	35	35	39	45	51	58	58	64	72

Table 4-12

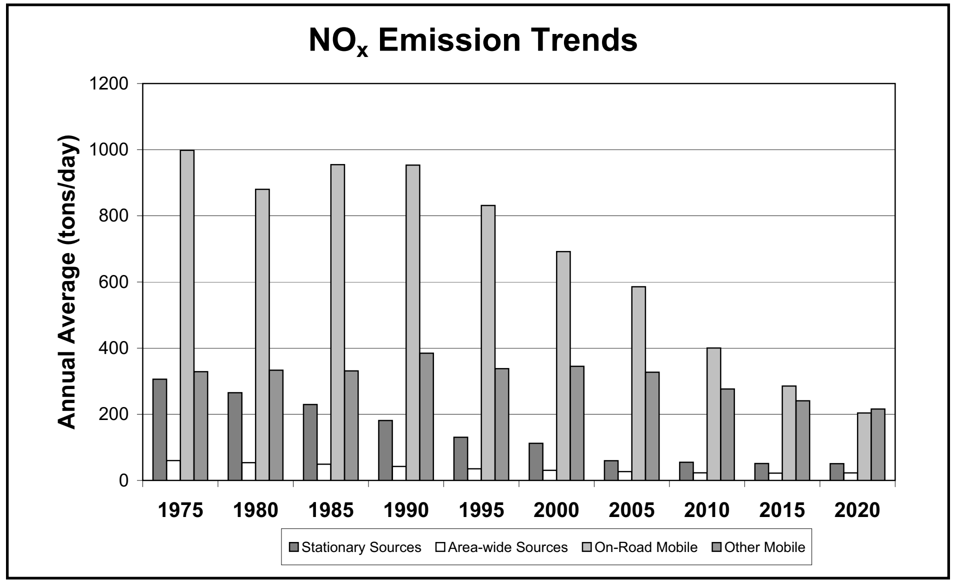


Figure 4-14

South Coast Air Basin

Nitrogen Dioxide Air Quality Trend

The South Coast Air Basin is one of only a few areas in California where NO_2 has been a problem. The South Coast Air Basin attained the State 1-hour NO_2 standard in 1994, bringing the entire State into attainment. The federal standard has not been exceeded since 1991.

Over the last 20 years, NO_2 values have decreased significantly in the South Coast Air Basin. The peak 1-hour indicator for 2005 was half of what it was during 1986. However, since the early 1990's, maximum 1-hour NO_2 concentrations that exceed the level of the State standard have occasionally occurred but have not affected the area's attainment status. These exceedances have been very infrequent and limited to either the Banning Airport or the Burbank-West Palm Avenue monitoring sites. Maximum concentrations have been much lower in the last three years.

NO_2 is formed from NO_x emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO_x emissions.

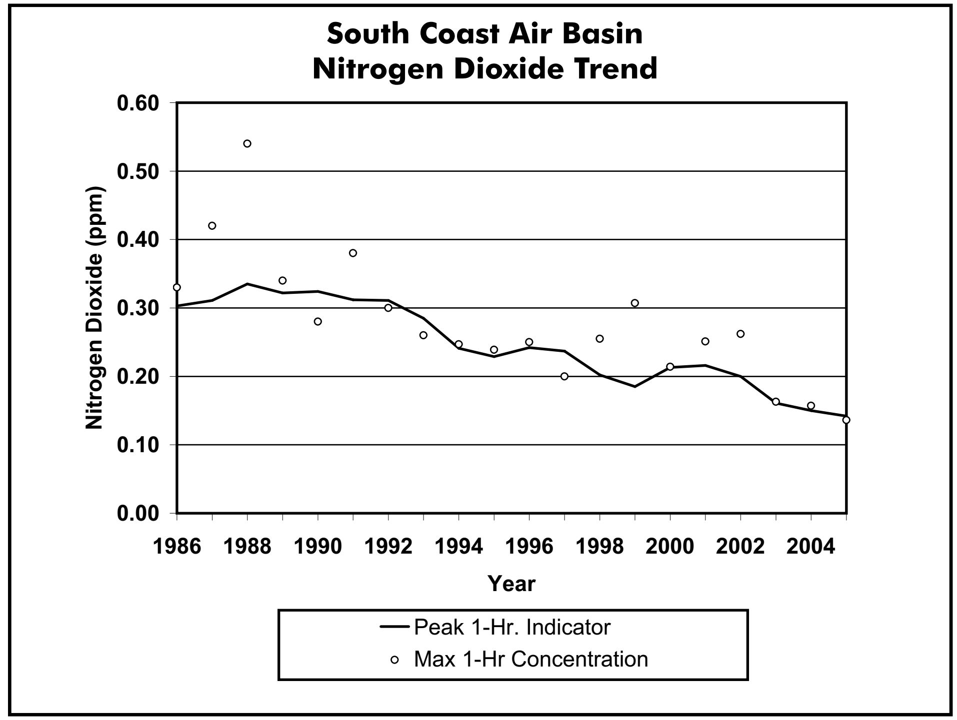


Figure 4-15

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator (State)	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.185	0.213	0.216	0.200	0.161	0.150	0.142
Max. 1-Hr. Concentration	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.255	0.307	0.214	0.251	0.262	0.163	0.157	0.136
Max. Annual Average	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033	0.031

Table 4-13

San Francisco Bay Area Air Basin

Introduction - Area Description

The San Francisco Bay Area is California's second largest metropolitan area and is the focal point of northern California. The nine county area comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern half of Sonoma County, and the southwestern portion of Solano County. The unifying feature of the area is the Bay itself, which is oriented north-south and covers about 400 square miles of the area's total 5,340 square miles.

About 19 percent of California's population resides in the San Francisco Bay Area, and pollution sources in the region account for about 15 percent of the total statewide criteria pollutant emissions. The climate in the San Francisco Bay Area varies from one location to the next. Along the coast, temperatures are mild year-round. However, as one moves inland, temperatures show larger diurnal and seasonal variations. Overall air quality in the San Francisco Bay Area Air Basin is better than inland areas such as the South Coast, San Joaquin Valley, and Sacramento regions. This is due to a more favorable climate, with cooler temperatures and better ventilation. However, exceedances of the State ozone and PM standards continue to occur in the San Francisco Bay Area Air Basin, and still pose challenges to State and local air pollution control agencies.

Figure 4-16

San Francisco Bay Area Air Basin

Emission Trends and Forecasts

The emission levels for the ozone precursors NO_x and ROG have been trending downward in the San Francisco Bay Area Air Basin since 1975. CO emissions have also been trending downward since 1975. On-road motor vehicles are the largest contributors to CO, ROG, and NO_x emissions in the air basin. The implementation of stricter mobile source (both on-road and other) emission standards will continue to decrease vehicle emissions in this air basin. Controls on stationary source solvent evaporation and fugitive emissions will also continue to reduce ROG emissions. The emission levels for SO_x have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The increase in SO_x emissions from 2005 onward is due to predicted growth in shipping activities. An increase in petroleum refining emissions is also seen.

San Francisco Bay Area Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_x	943	918	821	797	720	622	496	423	348	301
ROG	1430	1320	1047	764	646	525	382	330	302	290
PM_{10}	181	182	195	194	189	218	210	220	230	241
$PM_{2.5}$	81	79	79	83	81	84	81	83	84	87
SO_x	210	196	106	109	67	64	58	57	62	68
CO	9075	8334	7011	5325	3917	2961	2041	1617	1363	1230

Table 4-14

San Francisco Bay Area Air Basin

Population and VMT

Compared with the statewide totals, population and the number of vehicle miles traveled each day grew steeply until 1990, having slowed in recent years and are projected to continue at a slower rate in the San Francisco Bay Area Air Basin through 2020. During that 40-year period , the population is projected to increase about 60 percent, from about 5.1 million in 1980 to more than eight million in 2020. During the same period, the daily VMT is projected to increase 109 percent, from 93 million miles per day in 1980 to over 194 million miles per day in 2020. While these growth rates are lower than the growth rates seen in other areas, they still represent substantial increases.

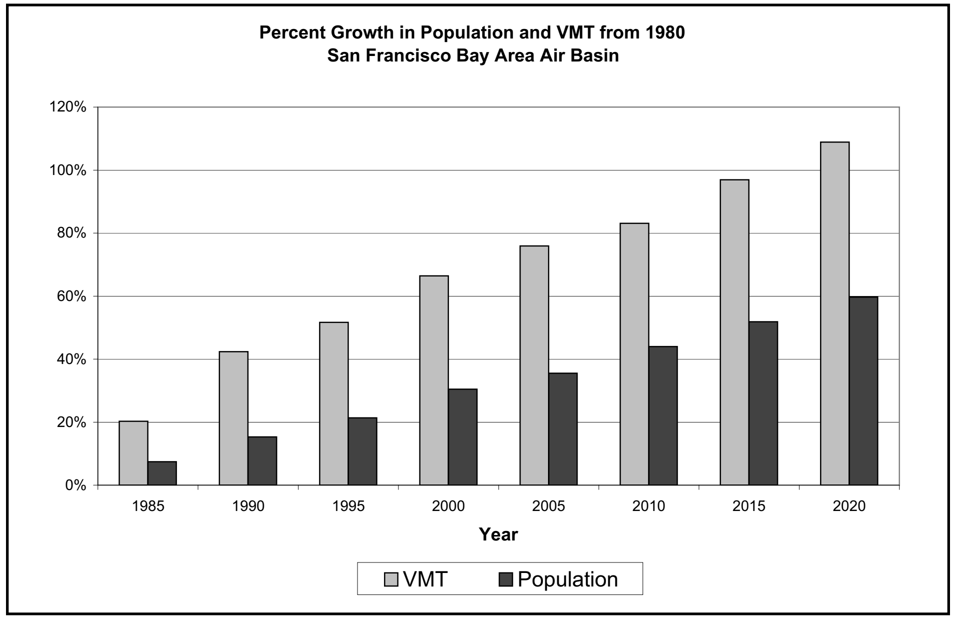


Figure 4-17

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	5095406	5473956	5874273	6182722	6646802	6904411	7337485	7736635	8135781
Avg. Daily VMT/1000	93109	111964	132558	141224	154959	163790	170505	183332	194476

Table 4-15

San Francisco Bay Area Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of ozone precursors have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO_x and ROG. Stationary source emissions of ROG have declined over the last 20 years due to new controls for oil refinery fugitive emissions and new rules for control of ROG from various industrial coatings and solvent operations.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***943***	***918***	***821***	***797***	***720***	***622***	***496***	***423***	***348***	***301***
Stationary Sources	229	205	134	124	107	83	49	49	51	53
Area-wide Sources	13	14	15	19	20	19	20	20	21	21
On-Road Mobile	542	540	500	453	385	312	234	181	124	88
Gasoline Vehicles	516	493	427	356	296	215	128	86	59	42
Diesel Vehicles	26	47	73	97	89	98	106	94	64	46
Other Mobile	159	159	172	201	208	207	194	174	153	138
Gasoline Fuel	10	10	11	13	14	14	13	11	10	10
Diesel Fuel	123	121	130	154	158	154	142	120	97	77
Other Fuel	27	28	31	34	37	39	39	43	46	51

Table 4-16

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1430***	***1320***	***1047***	***764***	***646***	***525***	***382***	***330***	***302***	***290***
Stationary Sources	294	255	164	113	121	111	73	75	79	82
Area-wide Sources	111	110	107	111	97	93	88	90	93	96
On-Road Mobile	915	841	654	425	319	223	139	97	72	57
Gasoline Vehicles	912	836	647	417	314	218	133	92	68	54
Diesel Vehicles	3	5	7	8	5	5	5	5	4	3
Other Mobile	111	114	122	114	108	98	83	67	59	56
Gasoline Fuel	83	85	90	79	74	67	56	44	38	36
Diesel Fuel	18	17	19	22	24	22	20	16	12	10
Other Fuel	11	12	13	13	11	9	7	8	9	10

Table 4-17

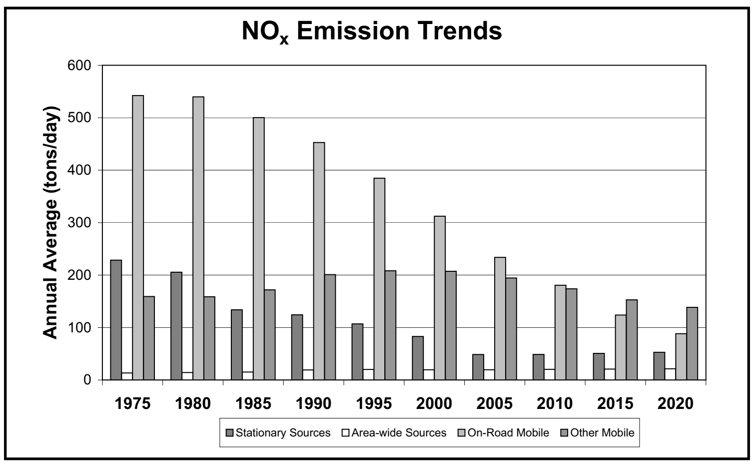


Figure 4-18

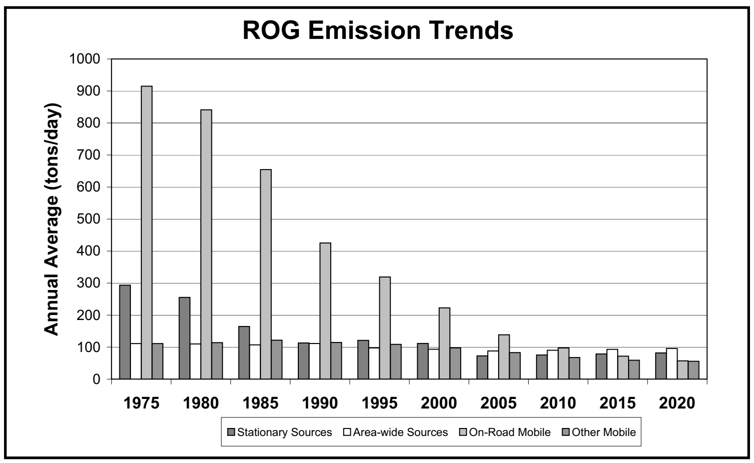


Figure 4-19

San Francisco Bay Area Air Basin

Ozone Air Quality Trend

Ozone concentrations in the San Francisco Bay Area are much lower than in the South Coast and San Joaquin Valley Air Basins. The peak 1-hour and 8-hour indicators have declined by over 21 percent during the last 20 years. The number of days when State and federal standards are exceeded show a similar trend. Another indication of progress is that the Bay Area now qualifies for attainment of the federal 8-hour ozone standard, although they still exceed the more stringent State 1-hour and 8-hour standards. Although the long-term trends indicate improving air quality, since 1994 the peak indicators have been relatively flat. However, it is not yet clear whether these data represent a significant change in the overall trend.

Meteorology can cause ozone and ozone precursor emissions to be transported from one air basin to another. The ARB has identified the San Francisco Bay Area Air Basin as a transport contributor to the following six areas: the Sacramento region, the Mountain Counties Air Basin, the North Central Coast Air Basin, the North Coast Air Basin, the San Joaquin Valley Air Basin, and the South Central Coast Air Basin. The amount of transport impact varies from day to day, depending in large part on meteorology. To the extent that the Bay Area continues to reduce ozone precursor emissions, the transport impact on downwind areas should also decrease.

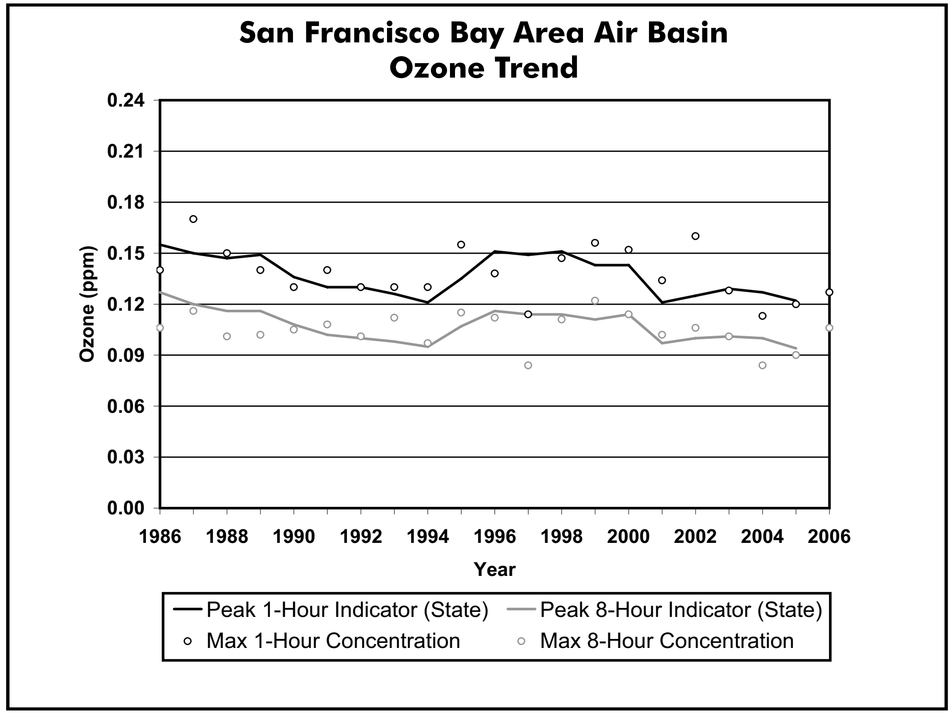


Figure 4-20

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[1]
Peak 8-Hour Indicator (State)	0.127	0.120	0.116	0.116	0.108	0.102	0.100	0.098	0.095	0.107	0.116	0.114	0.114	0.111	0.114	0.097	0.100	0.101	0.100	0.094	
Avg. of 4th High 8-Hr. in 3 Yrs	0.097	0.092	0.092	0.097	0.088	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.082	0.082	0.086	0.084	0.078	
Peak 1-Hour Indicator (State)	0.155	0.150	0.147	0.149	0.136	0.130	0.130	0.126	0.121	0.135	0.151	0.149	0.151	0.143	0.143	0.121	0.125	0.129	0.127	0.122	
4th High 1-Hr. in 3 Yrs[2]	0.150	0.150	0.140	0.140	0.130	0.130	0.130	0.120	0.121	0.138	0.138	0.138	0.138	0.139	0.139	0.126	0.124	0.123	0.123	0.113	
Max. 8-Hr. Concentration	0.106	0.116	0.101	0.102	0.105	0.108	0.101	0.112	0.097	0.115	0.112	0.084	0.111	0.122	0.114	0.102	0.106	0.101	0.084	0.090	0.106
Maximum 1-Hr. Concentration	0.140	0.170	0.150	0.140	0.130	0.140	0.130	0.130	0.130	0.155	0.138	0.114	0.147	0.156	0.152	0.134	0.160	0.128	0.113	0.120	0.127
Days Above State 8-Hr. Std.	34	57	44	34	17	26	30	23	20	30	37	10	29	28	17	21	19	20	13	9	22
Days Above Nat. 8-Hr. Std.	13	29	20	13	7	6	6	5	4	18	14	0	16	9	4	7	7	7	0	1	12
Days Above State 1-Hr. Std.	39	46	41	22	14	23	23	19	13	28	34	8	29	20	12	15	16	19	7	9	18

[1] Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

[2] The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-18

San Francisco Bay Area Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} increased in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Emissions of directly emitted PM_{10} from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the San Francisco Bay Area Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***181***	***182***	***195***	***194***	***189***	***218***	***210***	***220***	***230***	***241***
Stationary Sources	38	26	23	20	21	19	15	16	17	17
Area-wide Sources	123	134	148	146	145	177	174	184	195	205
On-Road Mobile	7	9	11	12	10	10	10	10	10	10
Gasoline Vehicles	5	5	5	5	5	6	6	7	8	8
Diesel Vehicles	2	4	6	8	5	4	3	3	2	1
Other Mobile	13	13	14	16	13	12	11	10	9	8
Gasoline Fuel	1	1	1	2	2	2	2	2	2	3
Diesel Fuel	8	8	9	11	9	9	8	7	5	3
Other Fuel	3	3	4	4	3	2	1	2	2	2

Table 4-19

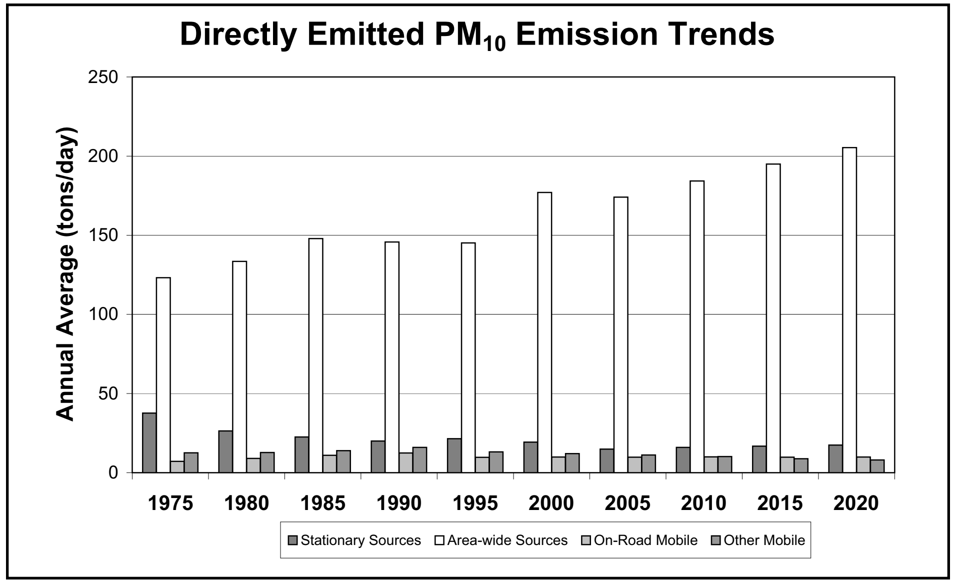


Figure 4-21

San Francisco Bay Area Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ remained relatively constant in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to increase slightly through 2020. Emissions from stationary sources declined slightly, while area-wide sources increased. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Emissions of directly emitted $PM_{2.5}$ from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 60 percent of the ambient $PM_{2.5}$ in the San Francisco Bay Area Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***81***	***79***	***79***	***83***	***81***	***84***	***81***	***83***	***84***	***87***
Stationary Sources	26	20	14	12	15	14	11	12	13	13
Area-wide Sources	38	41	44	47	47	51	53	55	57	60
On-Road Mobile	5	7	8	10	7	7	7	7	7	7
Gasoline Vehicles	3	3	2	3	3	3	4	4	5	5
Diesel Vehicles	2	4	6	7	4	4	3	3	2	1
Other Mobile	12	12	13	15	12	11	10	9	8	7
Gasoline Fuel	1	1	1	1	1	1	1	2	2	2
Diesel Fuel	8	8	8	10	8	8	7	6	4	3
Other Fuel	3	3	3	4	3	2	1	2	2	2

Table 4-20

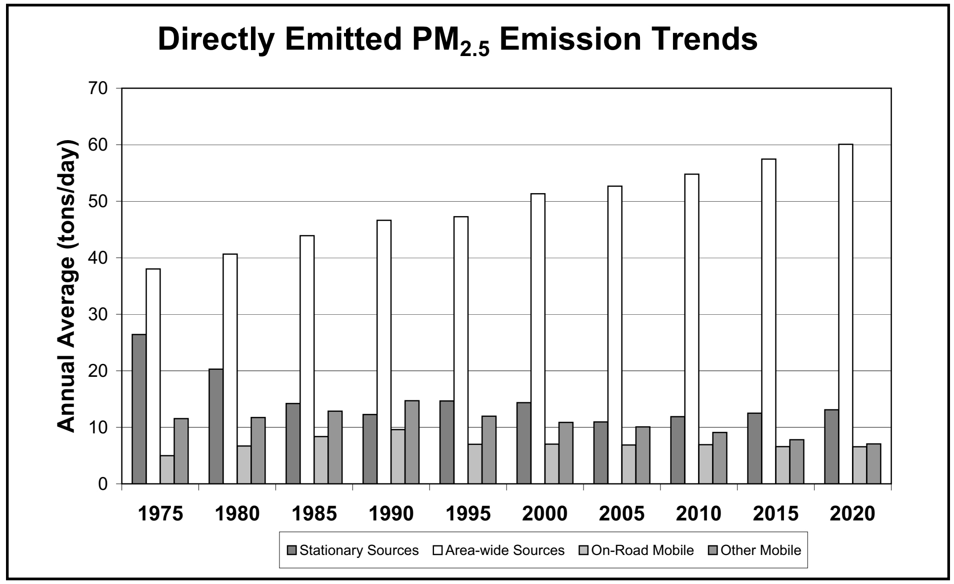


Figure 4-22

San Francisco Bay Area Air Basin

PM_{10} Air Quality Trend

As with other pollutants, the PM_{10} statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased by more than 32 percent.

Calculated exceedance days for the State 24-hour standard dropped from a high of 76 days during 1989 to 23 days during 2005. The national 24-hour standard was last exceeded in 1991. Because many of the same sources contribute to both ozone and PM_{10}, future ozone precursor emission controls should help ensure continued PM_{10} improvements.

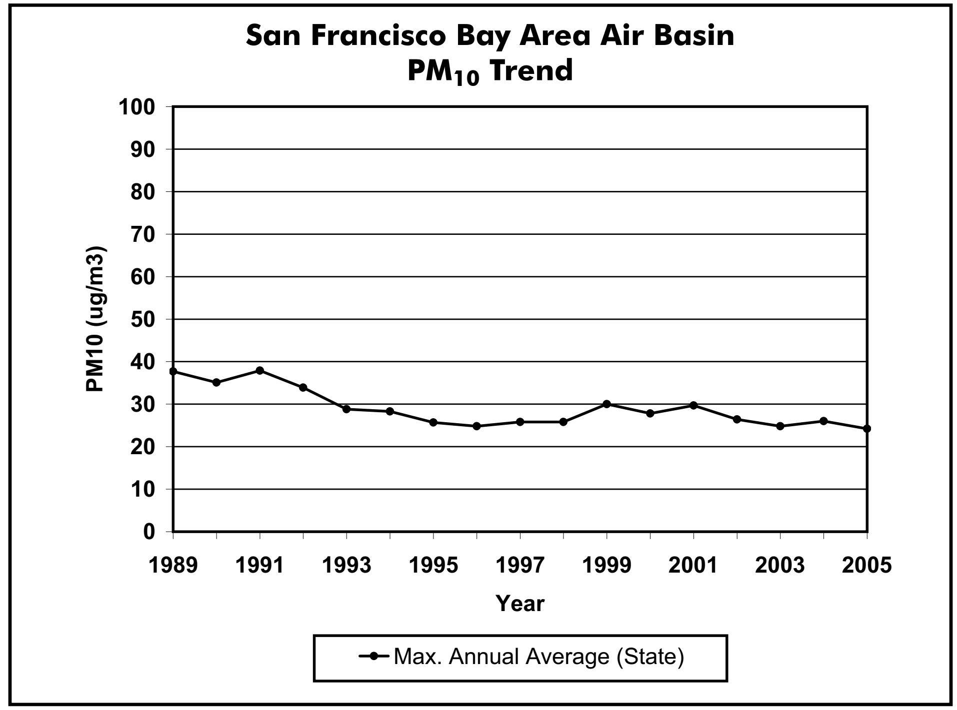


Figure 4-23

PM_{10} (ug/m³)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			146	147	165	155	112	93	97	74	76	85	100	117	80	114	84	60	65	81
Max. 24-Hr. Concentration (Nat)			146	150	165	155	112	101	97	75	77	95	92	119	76	109	80	58	63	78
Max. Annual Average (State)				37.7	35.1	37.9	33.9	28.8	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7	26.4	24.8	26.0	24.2
Max. Annual Average (Nat)			33.8	40.8	35.2	38.3	33.7	28.8	28.6	28.4	24.9	25.8	25.1	28.7	26.8	28.9	30.6	24.2	25.3	23.5
Calc Days Above State 24-Hr Std				76	70	91	53	37	36	24	12	18	18	37	42	48	24	18	25	23
Calc Days Above Nat 24-Hr Std				0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-21

San Francisco Bay Area Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average $PM_{2.5}$ concentrations (national) in the San Francisco Bay Area decreased slightly in the last seven years. The State annual average concentration trend however, remained relatively constant during the last six years, due to differences in State and national monitoring methods. The 98th percentile of 24-hour $PM_{2.5}$ concentrations also declined during the last six-year period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

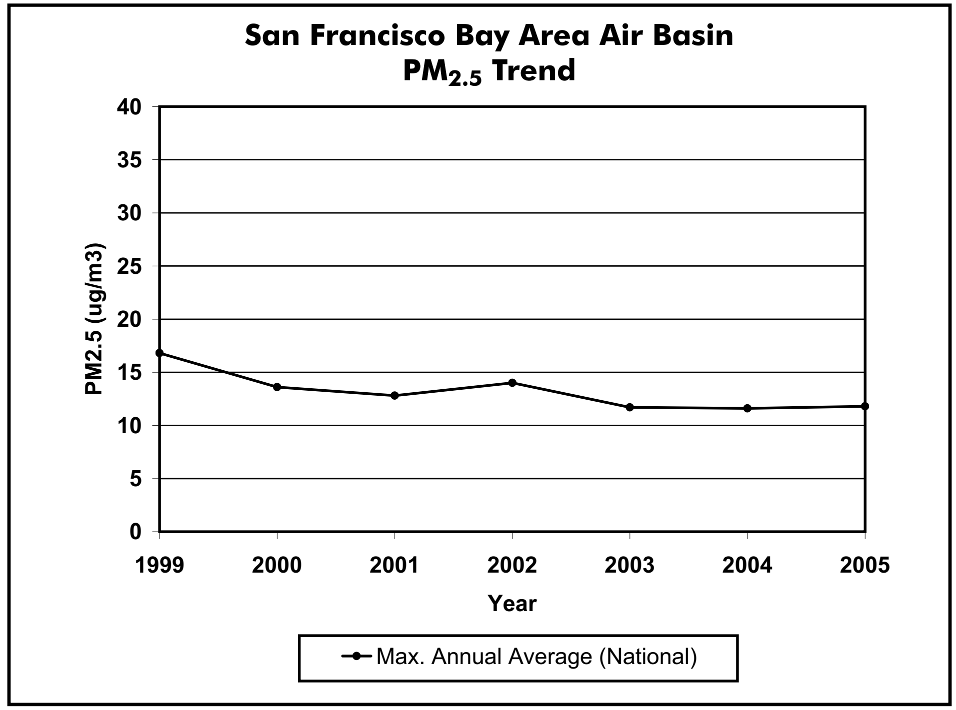


Figure 4-24

$PM_{2.5}$ (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														90.5	67.2	107.5	84.5	56.1	73.7	54.6
Max. 24-Hr. Concentration (Nat)														90.5	67.2	107.5	76.7	56.1	73.7	54.6
98th Percentile of 24-Hr Conc.															55.3	85.6	62.3	37.4	42.2	39.8
Annual Average (State)															11.6	12.9	14.0	11.7	11.6	11.8
Annual Average (Nat)														16.8	13.6	12.8	14.0	11.7	11.6	11.8

Table 4-22

San Francisco Bay Area Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been declining in the San Francisco Bay Area Air Basin since 1975. Motor vehicles and other mobile sources are the largest sources of CO emissions in the air basin. Emissions from motor vehicles have been declining, with the introduction of new automotive emission controls, despite increases in VMT. Commercial and industrial fuel combustion and electric generation contribute a significant portion of the stationary source CO emissions. Area-wide CO emissions are primarily from residential fuel combustion (including wood), waste burning, and fires.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***9075***	***8334***	***7011***	***5325***	***3917***	***2961***	***2041***	***1617***	***1363***	***1230***
Stationary Sources	46	55	73	65	62	50	38	38	40	42
Area-wide Sources	126	135	143	160	163	169	178	182	188	194
On-Road Mobile	8391	7615	6209	4446	3077	2203	1338	914	631	460
Gasoline Vehicles	8381	7597	6182	4414	3050	2177	1312	889	611	444
Diesel Vehicles	9	18	27	32	27	26	25	25	20	16
Other Mobile	511	529	586	654	615	539	488	484	504	533
Gasoline Fuel	401	416	463	512	472	410	364	351	359	376
Diesel Fuel	57	57	64	79	82	71	62	62	67	73
Other Fuel	53	56	59	62	62	59	61	70	77	85

Table 4-23

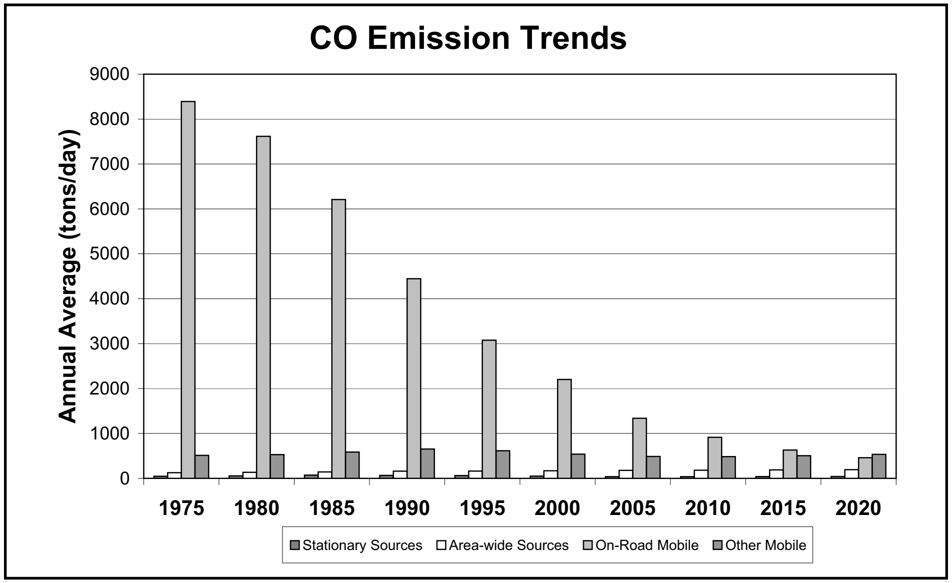


Figure 4-25

San Francisco Bay Area Air Basin

Carbon Monoxide Air Quality Trend

Similar to other areas of the State, CO concentrations in the San Francisco Bay Area Air Basin have declined substantially over the last 20 years. The peak 8-hour indicator value during 2005 is 26 percent of what it was during 1986 and is now well below the level of the standards. In fact, neither the State nor the national standards have been exceeded in this area since 1991.

Much of the decline in ambient CO concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles. The San Francisco Bay Area Air Basin is currently designated as attainment for both the State and national CO standards. Based on emission projections, the area is expected to maintain its attainment status in the coming years.

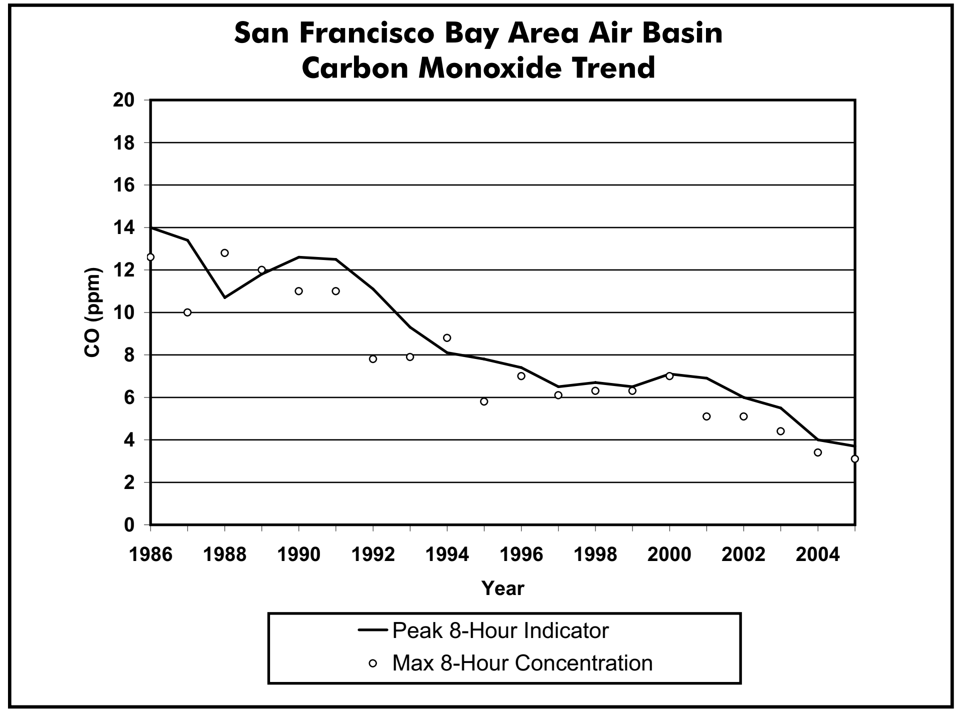


Figure 4-26

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator (State)	14.0	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	5.5	4.0	3.7
Max. 1-Hr. Concentration	20.0	17.0	15.0	19.0	18.0	15.0	12.0	14.0	12.0	10.1	8.8	10.7	8.7	9.0	9.8	7.6	7.7	8.6	4.8	4.5
Max. 8-Hr. Concentration (State)	12.6	10.0	12.8	12.0	11.0	11.0	7.8	7.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	5.1	4.4	3.4	3.1
Days Above State 8-Hr. Std.	8	2	4	10	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	8	1	4	9	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-24

San Francisco Bay Area Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x and NO_2 have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO_x.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***943***	***918***	***821***	***797***	***720***	***622***	***496***	***423***	***348***	***301***
Stationary Sources	229	205	134	124	107	83	49	49	51	53
Area-wide Sources	13	14	15	19	20	19	20	20	21	21
On-Road Mobile	542	540	500	453	385	312	234	181	124	88
Gasoline Vehicles	516	493	427	356	296	215	128	86	59	42
Diesel Vehicles	26	47	73	97	89	98	106	94	64	46
Other Mobile	159	159	172	201	208	207	194	174	153	138
Gasoline Fuel	10	10	11	13	14	14	13	11	10	10
Diesel Fuel	123	121	130	154	158	154	142	120	97	77
Other Fuel	27	28	31	34	37	39	39	43	46	51

Table 4-25

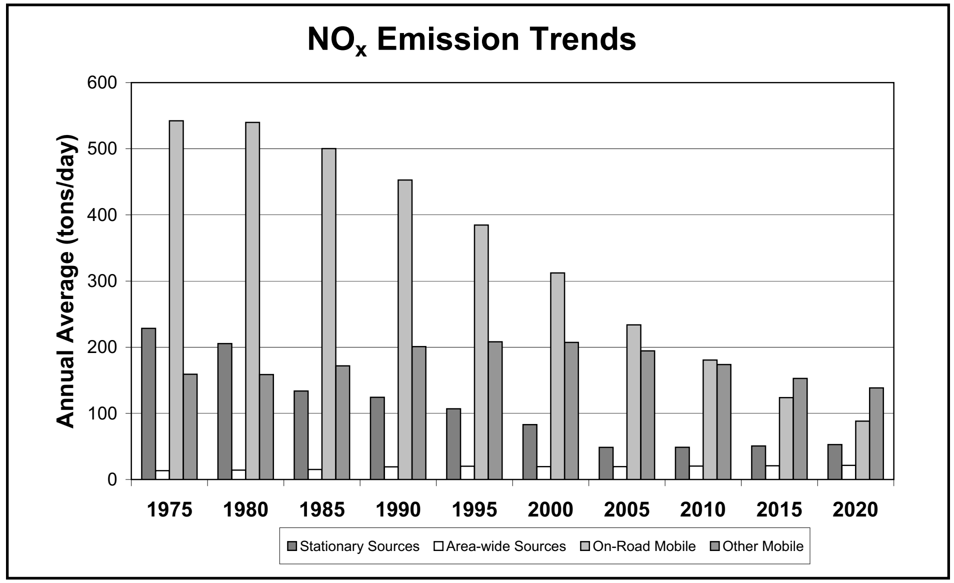


Figure 4-27

San Francisco Bay Area Air Basin

Nitrogen Dioxide Air Quality Trend

The San Francisco Bay Area has attained both the State and national NO_2 standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. The peak 1-hour indicator has declined by almost 58 percent in the San Francisco Bay Area since 1986. This downward trend is expected to continue.

NO_2 is formed from NO_x emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO_x emissions.

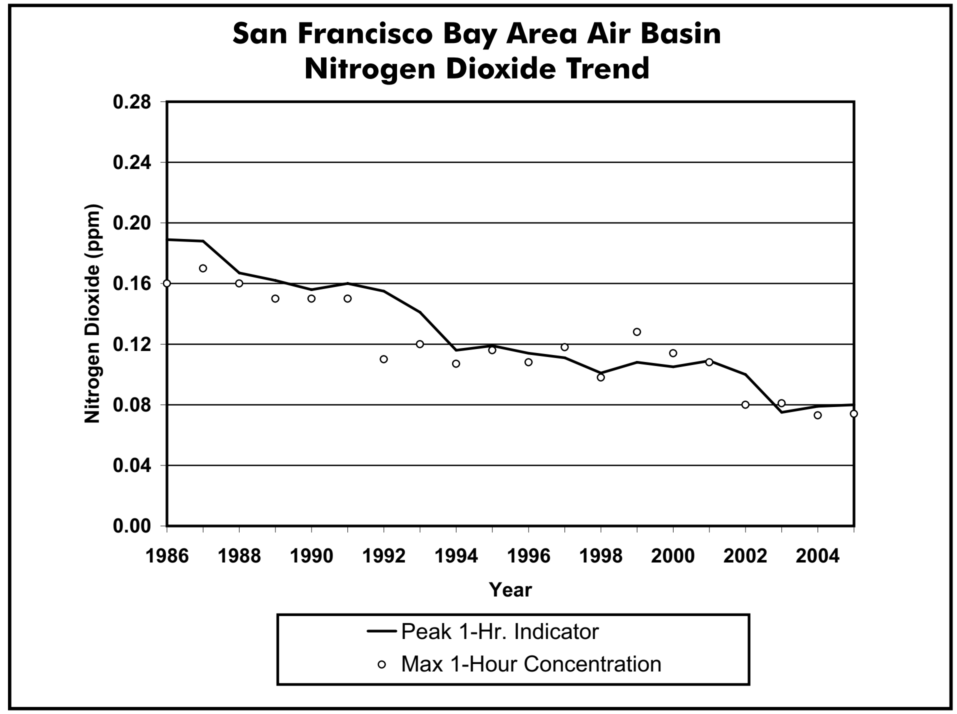


Figure 4-28

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator (State)	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100	0.075	0.079	0.080
Max. 1-Hr. Concentration	0.160	0.170	0.160	0.150	0.150	0.150	0.110	0.120	0.107	0.116	0.108	0.118	0.098	0.128	0.114	0.108	0.080	0.081	0.073	0.074
Max. Annual Average	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024	0.019	0.018	0.017	0.019

Table 4-26

San Joaquin Valley Air Basin

Introduction - Area Description

The San Joaquin Valley Air Basin occupies the southern two-thirds of California's Central Valley. The eight-county area comprises Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and the western portion of Kern County. The Valley covers nearly 23,490 square miles. With very few exceptions, the San Joaquin Valley is flat, with most of the area lying below 1,000 feet in elevation and most of the population living below 500 feet. The Valley floor slopes downward from east to west, and the San Joaquin River winds its way along the western side from south to north.

Similar to other inland areas, the San Joaquin Valley has cool wet winters and hot dry summers. Generally, the temperature increases and rainfall decreases from north to south.

In contrast to other California areas, air quality in the San Joaquin Valley is not dominated by emissions from one large urban area. Instead, there are a number of moderately sized urban areas spread along the main axis of the Valley. This wide distribution of emissions complicates the challenge faced by air quality control agencies. Overall, about 10 percent of California's population lives in the San Joaquin Valley, and pollution sources in the region account for about 13 percent of the total statewide criteria pollutant emissions.

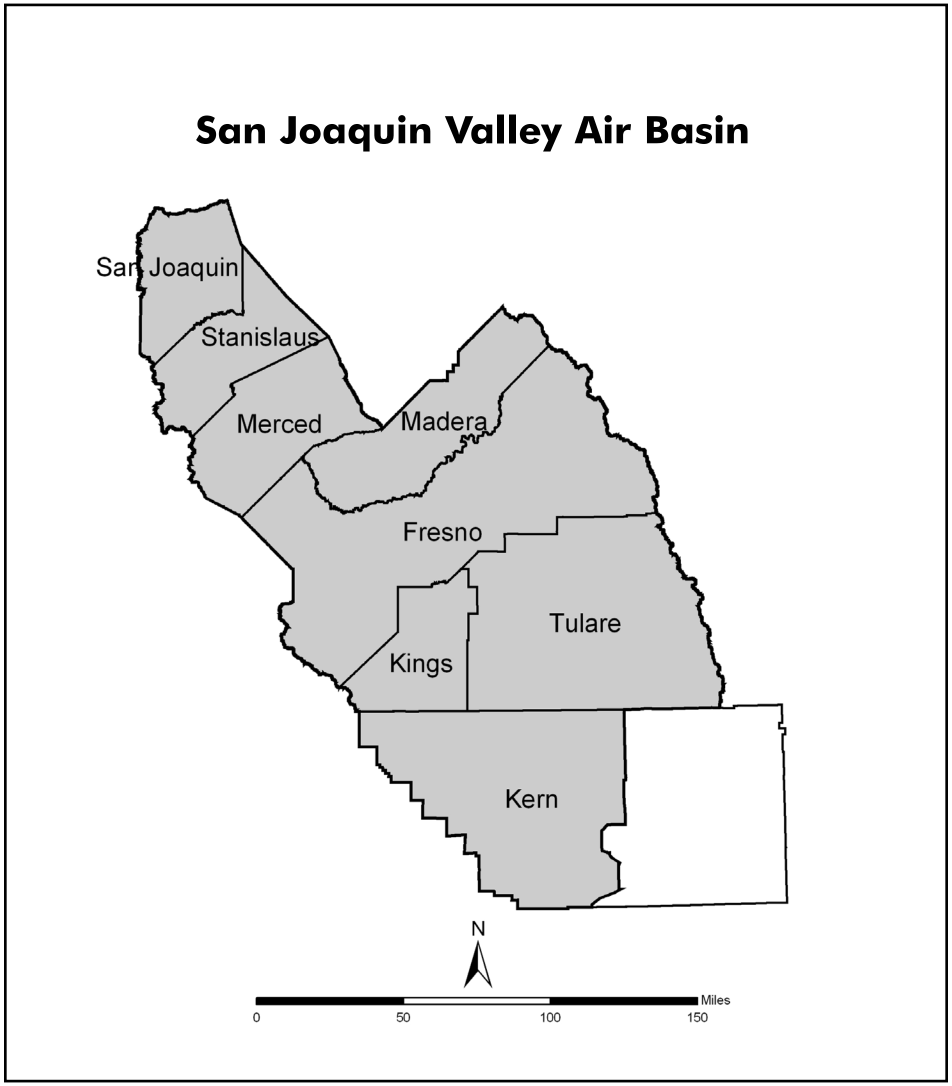


Figure 4-29

San Joaquin Valley Air Basin

Emission Trends and Forecasts

With the exception of PM_{10}, the emission levels in the San Joaquin Valley Air Basin have been decreasing since 1990. The decreases are predominantly due to motor vehicle controls and reductions in evaporative and fugitive emissions. On-road motor vehicles are the largest contributors to CO emissions in the San Joaquin Valley. On-road motor vehicles, other mobile sources, and stationary sources are all significant contributors to NO_x emissions. A significant portion of the stationary source ROG emissions is fugitive emissions from the extensive oil and gas production operations in the lower San Joaquin Valley. PM_{10} emissions are mostly fugitive dust from paved and unpaved roads, agricultural operations, and waste burning. The emission levels for SO_x have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The SO_x emissions increase slightly after 2010. This increase is seen mainly in the industrial fuel combustion categories.

San Joaquin Valley Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_x	700	839	831	844	750	672	616	549	431	349
ROG	1102	1176	1026	617	486	432	381	357	344	343
PM_{10}	287	284	287	346	336	339	297	293	294	300
$PM_{2.5}$	126	118	114	123	114	114	106	102	99	99
SO_x	299	272	129	100	33	37	26	25	27	29
CO	3564	3514	3241	3020	2404	1966	1538	1285	1101	1001

Table 4-27

San Joaquin Valley Air Basin

Population and VMT

Compared to California's other urban areas, the population and number of vehicle miles traveled each day in the San Joaquin Valley Air Basin has grown and is projected to grow at a much faster rate than most other areas of the State. The population is projected to increase about 144 percent, from nearly two million in 1980 to nearly five million in 2020. During the same period, the daily VMT is projected to increase by 312 percent, from nearly 33 million miles per day in 1980 to over 129 million miles per day in 2020. These growth rates are much higher than the growth rates in other areas.

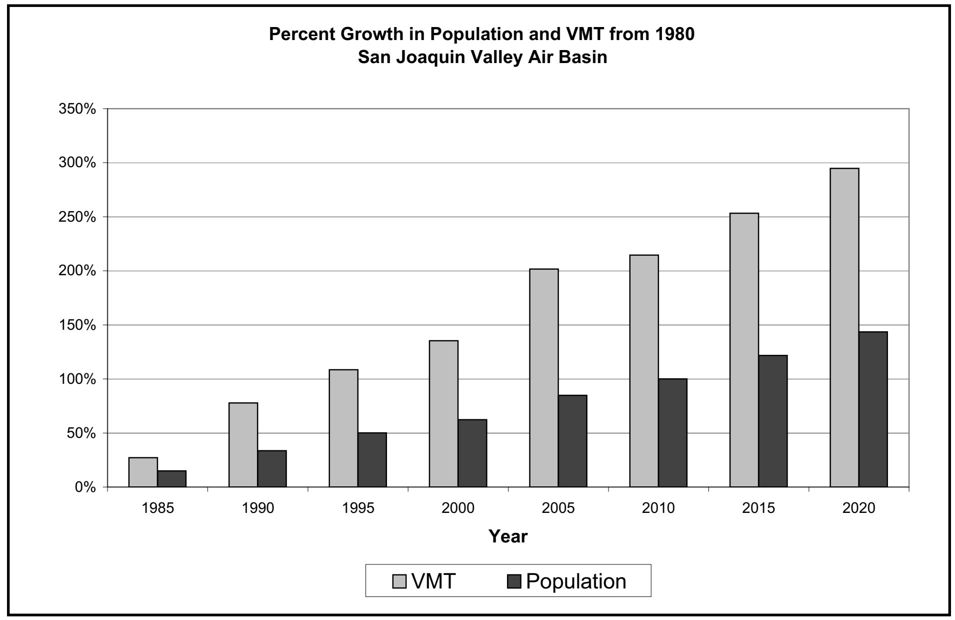


Figure 4-30

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1979840	2275776	2645311	2972667	3212615	3658320	3959518	4389922	4820322
Avg. Daily VMT/1000	32804	41697	58326	68389	77176	98950	103176	115884	129484

Table 4-28

San Joaquin Valley Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO_x and ROG are decreasing in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO_x emissions have been reduced by the adoption of more stringent emission standards. Stricter standards have reduced ROG emissions from motor vehicles since 1980, even though VMT have been increasing. Stationary and area-wide sources of ROG include petroleum production operations and the use of solvents. Stricter emission standards and new controls have reduced the ROG emissions from these sources.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***700***	***839***	***831***	***844***	***750***	***672***	***616***	***549***	***431***	***349***
Stationary Sources	246	328	321	267	197	135	104	104	107	108
Area-wide Sources	21	21	21	20	19	19	18	18	17	17
On-Road Mobile	245	261	293	344	344	339	339	298	204	140
Gasoline Vehicles	158	158	152	160	150	117	77	55	39	29
Diesel Vehicles	87	103	141	184	194	221	262	243	165	111
Other Mobile	189	230	196	214	190	179	155	129	104	84
Gasoline Fuel	4	5	5	6	6	6	6	6	6	6
Diesel Fuel	180	220	188	204	181	169	143	117	92	72
Other Fuel	4	5	4	4	4	5	5	6	6	7

Table 4-29

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1102***	***1176***	***1026***	***617***	***486***	***432***	***381***	***357***	***344***	***343***
Stationary Sources	632	701	568	185	92	88	77	80	83	86
Area-wide Sources	120	127	134	141	149	146	147	152	161	171
On-Road Mobile	285	271	250	216	174	131	95	72	53	41
Gasoline Vehicles	274	257	231	193	158	114	78	55	40	32
Diesel Vehicles	11	14	18	23	16	17	17	17	13	9
Other Mobile	64	78	74	75	71	67	63	54	48	46
Gasoline Fuel	31	39	43	42	40	38	36	32	30	30
Diesel Fuel	24	30	25	28	26	23	19	15	11	8
Other Fuel	9	9	6	6	5	6	7	7	7	7

Table 4-30

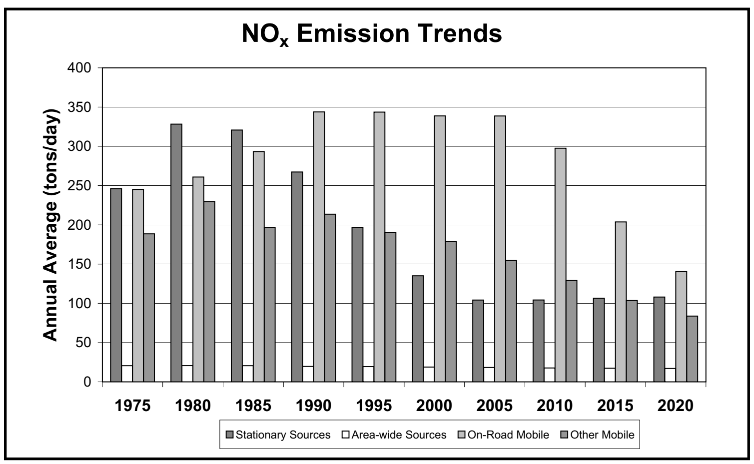


Figure 4-31

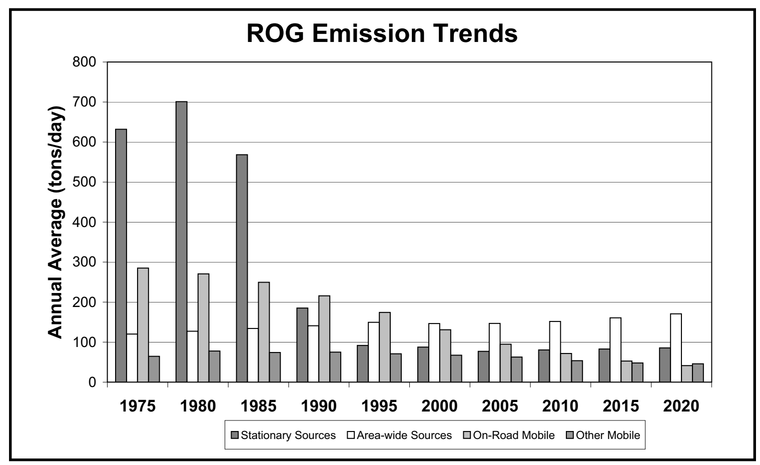


Figure 4-32

San Joaquin Valley Air Basin

Ozone Air Quality Trend

The ozone problem in the San Joaquin Valley ranks among the most severe in the State. Looking at ozone air quality from a historical perspective is challenging because of the lack of long-term monitors prior to 1990. Furthermore, monitoring did not include the sites in the worst portions of the basin until 1990. For this reason we are using 1990 as the beginning year to characterize trends.

Similar to other areas of the State, exceedance days have declined at a faster rate than peak levels. Peak levels declined by six percent while the number of State and national 8-hour exceedance days declined by 16 percent and 23 percent respectively. Most of this progress has occurred since 2003. However, the number of exceedance days in 2005 and 2006 were among the lowest in this 17 year period.

The ARB has identified the San Joaquin Valley Air Basin as both a contributor and a receptor for ozone transport. The Valley is a transport contributor to the Sacramento region, the Great Basin Valleys Air Basin, the Mountain Counties Air Basin, the Mojave Desert Air Basin, the North Central Coast Air Basin, and the South Central Coast Air Basin. In contrast, the San Joaquin Valley Air Basin is a receptor area for ozone transported from the Broader Sacramento Area and the San Francisco Bay Area Air Basin.

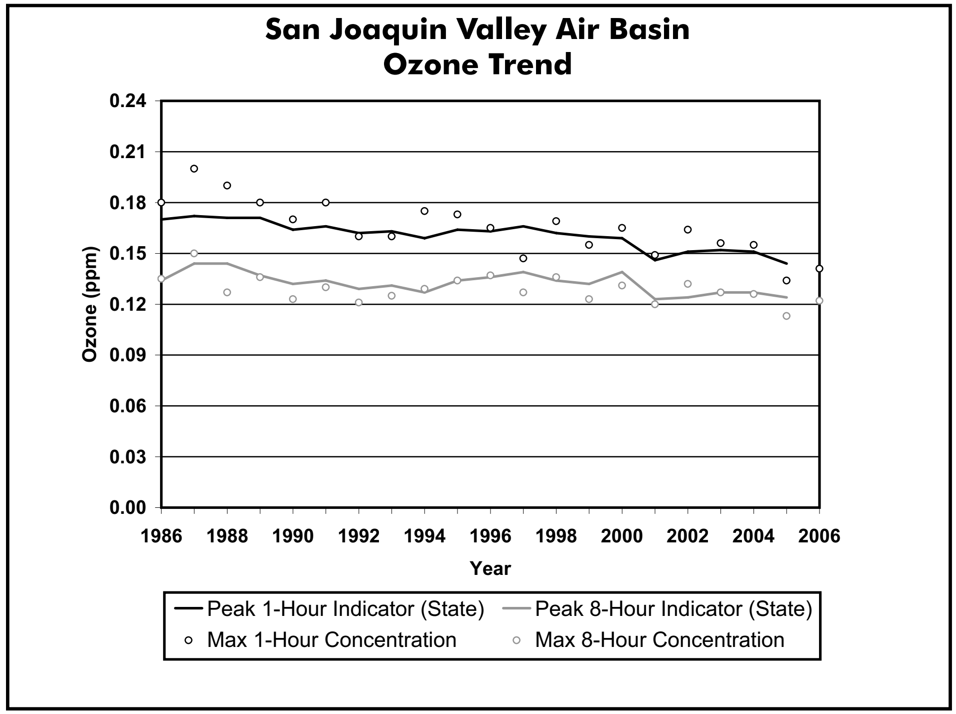


Figure 4-33

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[1]
Peak 8-Hour Indicator (State)	0.134	0.144	0.144	0.137	0.132	0.134	0.129	0.131	0.127	0.134	0.136	0.139	0.134	0.132	0.139	0.123	0.124	0.127	0.127	0.124	
Avg. of 4th High 8-Hr. in 3 Yrs	0.117	0.118	0.121	0.116	0.112	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.113	0.111	0.109	0.115	0.115	0.116	0.113	
Peak 1-Hour Indicator (State)	0.170	0.172	0.171	0.171	0.164	0.166	0.162	0.163	0.159	0.164	0.163	0.166	0.162	0.160	0.159	0.146	0.151	0.152	0.151	0.144	
4th High 1-Hr. in 3 Yrs[2]	0.180	0.170	0.170	0.180	0.170	0.160	0.160	0.160	0.160	0.164	0.165	0.164	0.161	0.161	0.161	0.146	0.151	0.151	0.151	0.149	
Max. 8-Hr. Concentration	0.135	0.150	0.127	0.136	0.123	0.130	0.121	0.125	0.129	0.134	0.137	0.127	0.136	0.123	0.131	0.120	0.132	0.127	0.126	0.113	0.122
Maximum 1-Hr. Concentration	0.180	0.200	0.190	0.180	0.170	0.180	0.160	0.160	0.175	0.173	0.165	0.147	0.169	0.155	0.165	0.149	0.164	0.156	0.155	0.134	0.141
Days Above State 8-Hr. Std.	186	189	200	182	179	167	169	174	166	163	164	169	127	175	158	192	181	172	167	124	141
Days Above Nat. 8-Hr. Std.	134	148	140	133	104	121	119	103	108	109	114	95	84	117	103	109	125	134	109	72	86
Days Above State 1-Hr. Std.	147	156	156	148	131	133	127	125	118	124	120	110	90	123	114	123	127	137	106	83	90

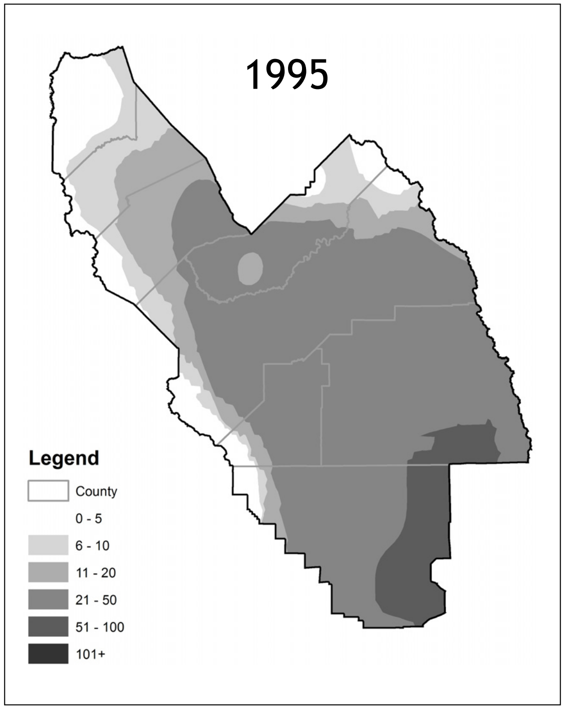
[1] Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

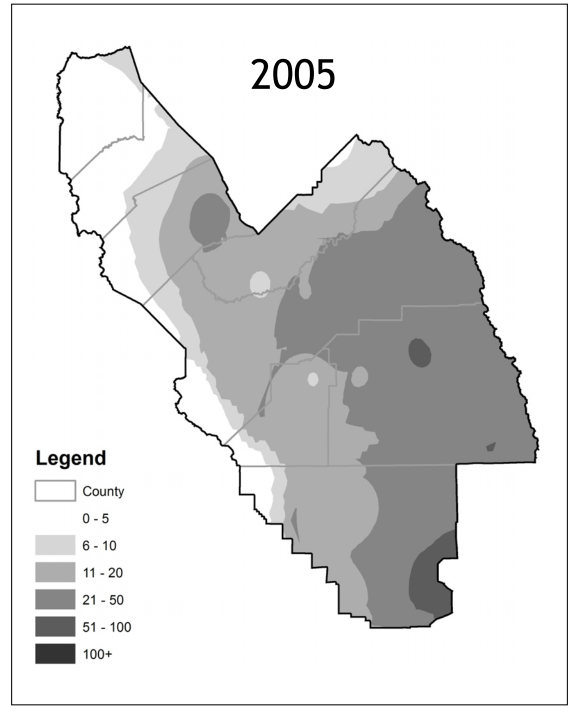
[2] The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-31

San Joaquin Valley Air Basin

Ozone Contour Maps - 3-year Average of National 8-Hour Exceedance Days





NOTE: Values used in these maps are for long-term sites only. Long-term sites are used ito more accurately represent a trend over a period, by comparing the same or similar sites over a long period.

Figure 4-34

Figure 4-35

Another way to look at ozone air quality is to evaluate how widespread the problem is within the air basin, using data for all sites. The maps on this page illustrate the reduction in days exceeding the national 8-hour standard over the last decade throughout the basin. The use of three-year averages helps to mitigate the changes in meteorology.

Similar to the South Coast, the two maps show a substantial reduction in the number of exceedance days over the last ten years. During the 1995 time period, more than half of the San Joaquin Valley had between 21 and 50 exceedance days. The worst site had about 90 days, which is equivalent to about three months during a year with ozone concentrations above the level of the standard. Areas in the northern San Joaquin Valley were cleaner than areas in the central and southern Valley. However, only a relatively small portion of the Basin averaged ten or fewer exceedance days.

The 2005 map shows a dramatic expansion of cleaner areas. Most of San Joaquin and Stanislaus counties now attain the federal 8-hour ozone standard. Much of the rest of the Valley experiences an average of only 6 to 20 exceedance days per year. Areas with more than 20 exceedance days are now generally limited to the eastern portion of the central and southern San Joaquin Valley. While the extent of these areas is much smaller than the 1995 timeframe, the areas of poor ozone air quality are also the most heavily populated. Even though these areas still pose a challenge, the worst sites show an average reduction in exceedance days of more than 35 percent over the last decade.

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San Joaquin Valley Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} have remained relatively unchanged between 1975 and 2005 and are projected to remain unchanged through 2020. PM_{10} emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from farming operations, waste burning, and residential fuel combustion (including wood).

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the San Joaquin Valley Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***287***	***284***	***287***	***346***	***336***	***339***	***297***	***293***	***294***	***300***
Stationary Sources	58	42	34	27	26	27	25	24	25	26
Area-wide Sources	204	213	222	281	282	285	246	246	250	258
On-Road Mobile	12	14	18	23	17	15	15	14	11	10
Gasoline Vehicles	2	2	2	2	3	3	4	5	5	6
Diesel Vehicles	10	12	16	21	14	12	11	9	6	4
Other Mobile	13	16	14	15	11	11	10	9	7	6
Gasoline Fuel	0	1	1	1	1	1	1	1	2	2
Diesel Fuel	12	15	12	13	10	9	8	6	4	3
Other Fuel	1	1	1	1	1	1	1	2	2	2

Table 4-32

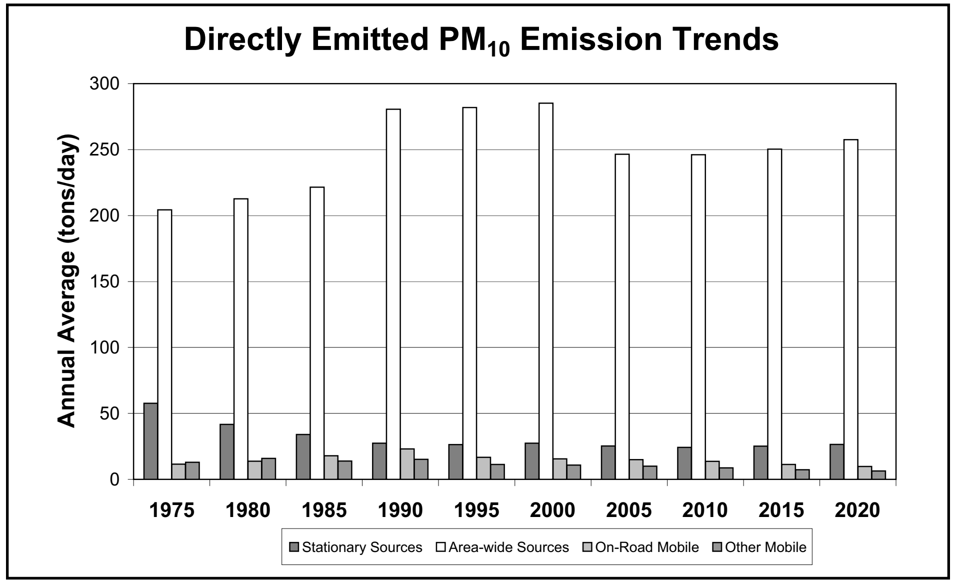

Figure 4-36

San Joaquin Valley Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ decreased from 1975 to 2005 and are projected to continue decreasing through 2020. $PM_{2.5}$ emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from farming operations, waste burning, and residential fuel combustion (including wood).

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 60 percent of the ambient $PM_{2.5}$ in the San Joaquin Valley Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***126***	***118***	***114***	***123***	***114***	***114***	***106***	***102***	***99***	***99***
Stationary Sources	46	32	24	18	18	18	17	17	18	19
Area-wide Sources	57	59	61	72	72	73	67	66	66	68
On-Road Mobile	10	12	16	20	14	13	12	11	9	7
Gasoline Vehicles	1	1	1	1	2	2	2	3	3	3
Diesel Vehicles	9	11	15	19	13	11	10	8	5	4
Other Mobile	12	15	13	14	10	10	9	8	7	6
Gasoline Fuel	0	0	1	1	1	1	1	1	1	1
Diesel Fuel	11	13	11	12	9	8	7	5	4	2
Other Fuel	1	1	1	1	1	1	1	2	2	2

Table 4-33

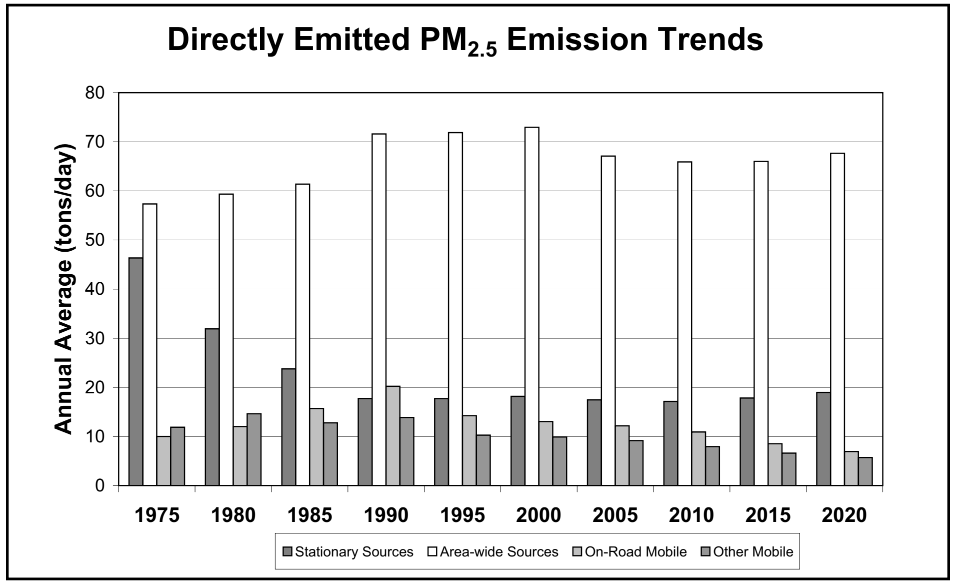

Figure 4-37

San Joaquin Valley Air Basin

PM_{10} Air Quality Trend

The available PM_{10} data show some variation during the trend period, but overall, there has been a downward trend. The low values for the annual average in 1988 and 1989 are due to the limited number of monitors with complete data for these years during the startup of the PM monitoring network. The period between 1990 and 2005 provides a better indication of trends. Over this period, the three-year average of the annual average (State) shows a decrease of nearly 34 percent. The calculated number of days exceeding the State and national 24-hour standards also shows a decrease. There were 292 calculated State standard exceedance days and 54 calculated national standard exceedance days during 1990. During 2005, there were 146 calculated State standard exceedance days and no national standard exceedance days.

Although PM_{10} air quality has improved overall in the San Joaquin Valley Air Basin, values overall are highly variable. The variability appears to be a result of meteorology, while the overall downward trend is consistent with a change in emissions. While, based on the ambient data, the San Joaquin Valley now attains the national PM_{10} standards, it will still be a number of years before this area reaches attainment of the more stringent State standards.

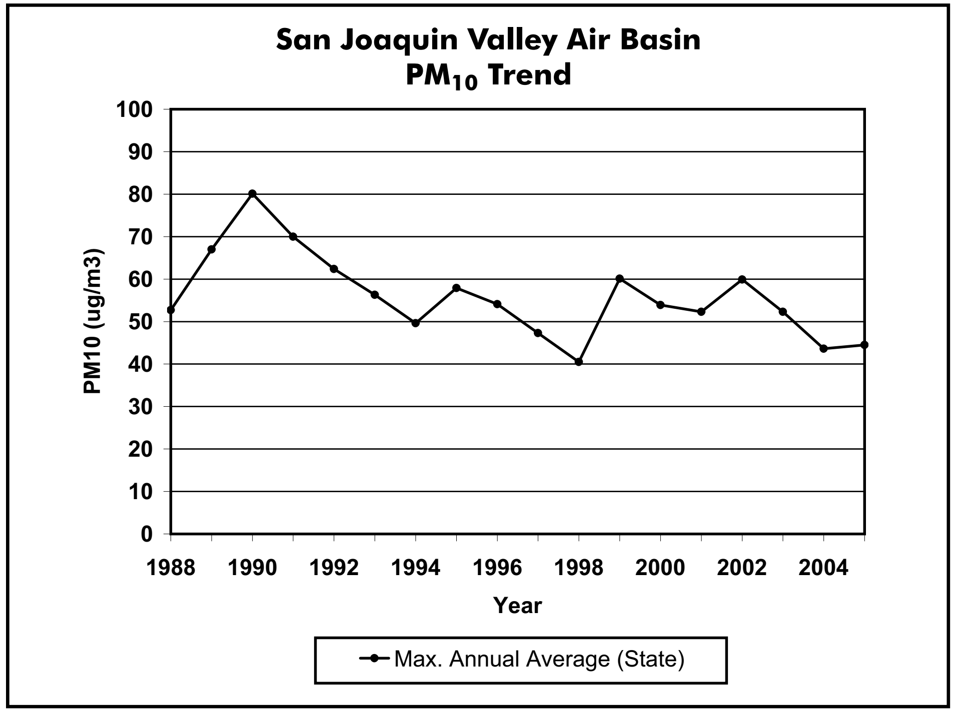

Figure 4-38

PM_{10} (ug/m³)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			206	237	439	279	186	239	192	279	153	199	167	186	153	221	194	150	219	137
Max. 24-Hr. Concentration (Nat)			206	237	439	279	186	239	192	279	153	228	160	183	145	212	189	150	217	131
Max. Annual Average (State)			52.7	67.0	80.1	70.0	62.4	56.3	49.6	57.9	54.1	47.3	40.5	60.1	53.9	52.3	59.9	52.3	43.6	44.5
Max. Annual Average (Nat)			74.3	79.3	79.3	76.3	62.9	56.9	50.1	58.2	52.0	48.2	52.5	59.5	53.1	57.4	59.2	52.4	47.9	44.3
Calc Days Above State 24-Hr Std			159	208	292	225	246	183	166	184	204	107	102	182	196	168	256	167	113	146
Calc Days Above Nat 24-Hr Std			46	29	54	40	9	3	2	4	0	2	5	4	0	4	3	0	1	0

Table 4-34

San Joaquin Valley Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average (national) $PM_{2.5}$ concentrations in the San Joaquin Valley Air Basin show a definite downward trend from 1999 through 2005. The State annual average concentrations remained relatively constant from 1999 through 2005, with a slight drop in 2004. The differences in trends are due to differences in State and national monitoring methods. The 98th percentile of 24-hour $PM_{2.5}$ concentrations also declined during this period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. The San Joaquin Valley Air Basin is currently designated as nonattainment for the State and national $PM_{2.5}$ standards. Measures adopted as part of the upcoming $PM_{2.5}$ SIP, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

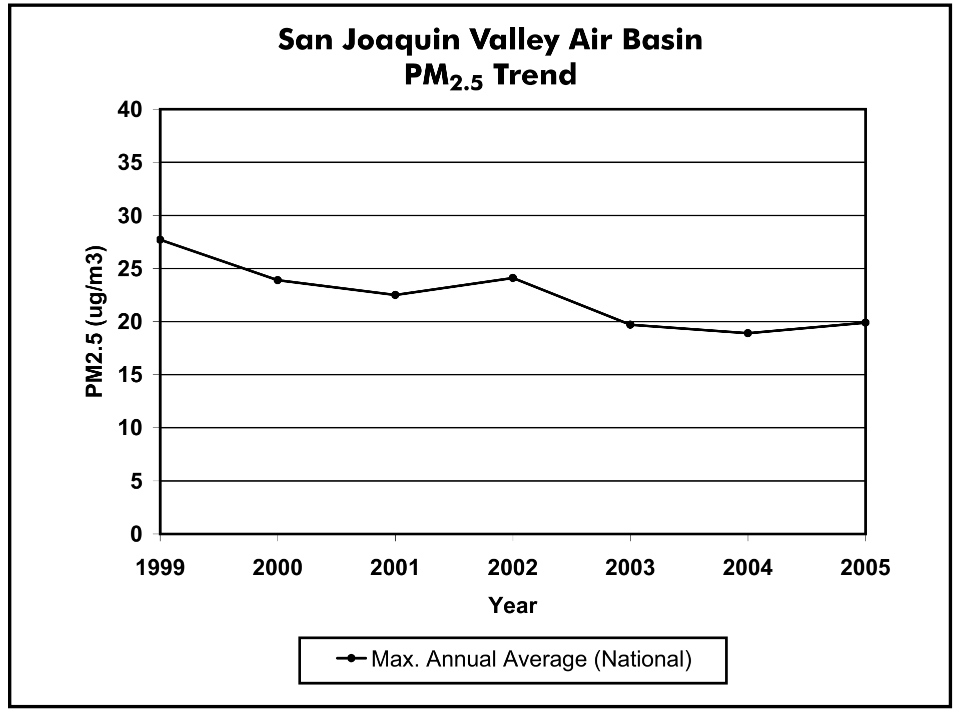

Figure 4-39

$PM_{2.5}$ (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														136.0	160.0	154.7	104.3	84.5	77.0	102.1
Max. 24-Hr. Concentration (Nat)														136.0	160.0	154.7	90.7	67.8	71.0	92.5
98th Percentile of 24-Hr Conc.														120.0	108.0	96.0	80.4	56.0	54.0	74.9
Annual Average (State)														23.4	23.9	20.8	24.1	24.8	18.2	22.4
Annual Average (Nat)														27.7	23.9	22.5	24.1	19.7	18.9	19.9

Table 4-35

San Joaquin Valley Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO decreased between 1975 and 2005 and are projected to continue decreasing through 2020. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1975, despite increases in VMT, with the introduction of new automotive emission controls and fleet turnover.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***3564***	***3514***	***3241***	***3020***	***2404***	***1966***	***1538***	***1285***	***1101***	***1001***
Stationary Sources	188	160	62	76	63	55	53	55	56	57
Area-wide Sources	261	266	272	275	270	269	269	268	268	269
On-Road Mobile	2767	2664	2516	2241	1676	1285	877	629	443	331
Gasoline Vehicles	2726	2613	2449	2156	1597	1209	801	556	387	286
Diesel Vehicles	41	51	67	85	79	76	75	72	56	45
Other Mobile	348	424	391	428	395	357	339	334	334	345
Gasoline Fuel	160	213	221	256	236	211	197	194	193	200
Diesel Fuel	80	101	91	104	93	77	63	56	53	53
Other Fuel	109	111	78	69	67	70	79	84	88	92

Table 4-36

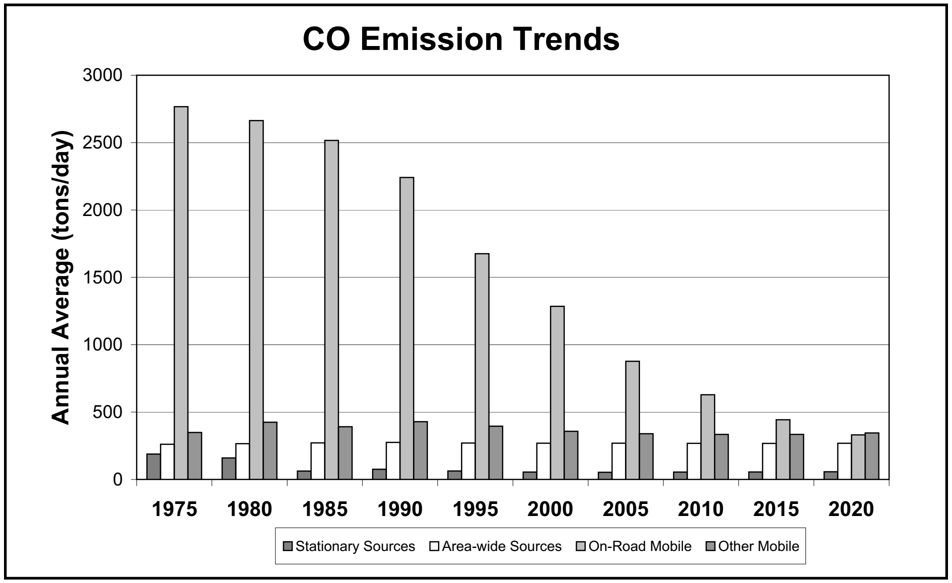

Figure 4-40

San Joaquin Valley Air Basin

Carbon Monoxide Air Quality Trend

CO concentrations show a fairly consistent downward trend from 1986 through 2005. The peak 8-hour indicator for 2005 is almost 74 percent lower than that for 1986. Measured concentrations in the San Joaquin Valley Air Basin have not exceeded the national CO standards since 1991, and concentrations have not exceeded the State standards for the last 10 years. Much of the decline in ambient CO concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles.

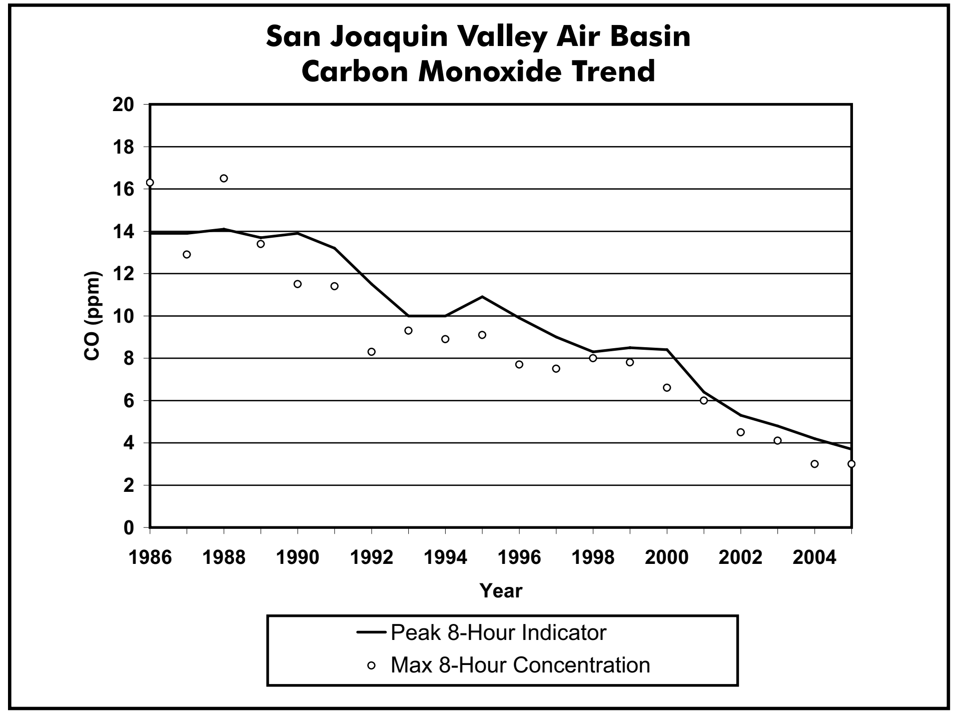

Figure 4-41

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator (State)	13.9	13.9	14.1	13.7	13.9	13.2	11.5	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	6.4	5.3	4.8	4.2	3.7
Max. 1-Hr. Concentration	21.0	16.0	19.0	23.0	17.0	19.0	13.0	13.0	15.0	12.0	11.0	9.9	10.3	11.9	10.1	8.4	6.1	5.8	4.6	4.3
Max. 8-Hr. Concentration (State)	16.3	12.9	16.5	13.4	11.5	11.4	8.3	9.3	8.9	9.1	7.7	7.5	8.0	7.8	6.6	6.0	4.5	4.1	3.0	3.0
Days Above State 8-Hr. Std.	13	4	5	24	10	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	11	4	6	18	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-37

San Joaquin Valley Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x and NO_2 increased between 1975 and 1990. Since 1990, however, emissions decreased and are projected to continue declining in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO_x emissions have been reduced by the adoption of more stringent emission standards.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***700***	***839***	***831***	***844***	***750***	***672***	***616***	***549***	***431***	***349***
Stationary Sources	246	328	321	267	197	135	104	104	107	108
Area-wide Sources	21	21	21	20	19	19	18	18	17	17
On-Road Mobile	245	261	293	344	344	339	339	298	204	140
Gasoline Vehicles	158	158	152	160	150	117	77	55	39	29
Diesel Vehicles	87	103	141	184	194	221	262	243	165	111
Other Mobile	189	230	196	214	190	179	155	129	104	84
Gasoline Fuel	4	5	5	6	6	6	6	6	6	6
Diesel Fuel	180	220	188	204	181	169	143	117	92	72
Other Fuel	4	5	4	4	4	5	5	6	6	7

Table 4-38

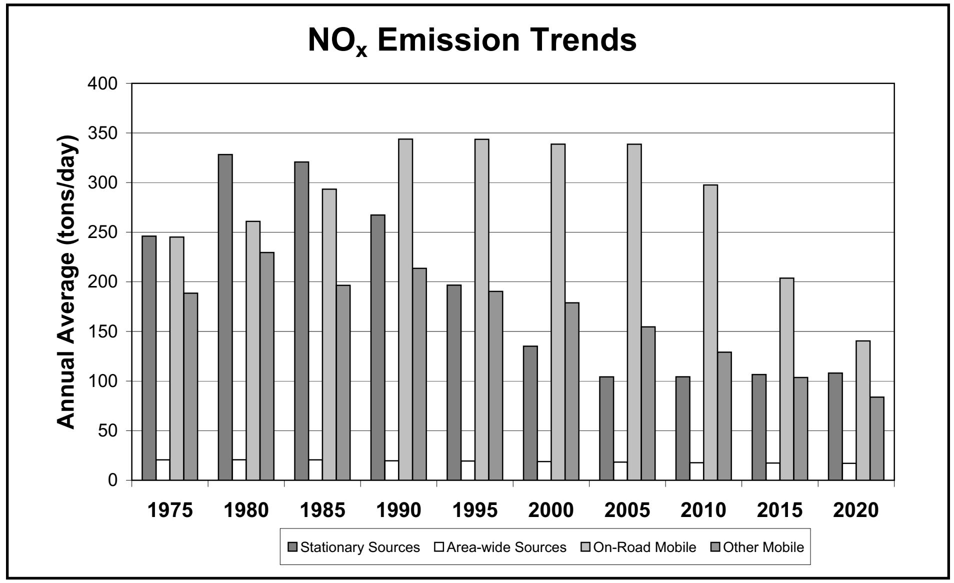

Figure 4-42

San Joaquin Valley Air Basin

Nitrogen Dioxide Air Quality Trend

The San Joaquin Valley has attained both the State and national NO_2 standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. From 1986 through 1989, ambient levels increased somewhat, but have decreased substantially since 1990. The peak 1-hour indicator has declined by more than 44 percent since 1990. This downward trend is expected to continue.

NO_2 is formed from NO_x emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO_x emissions.

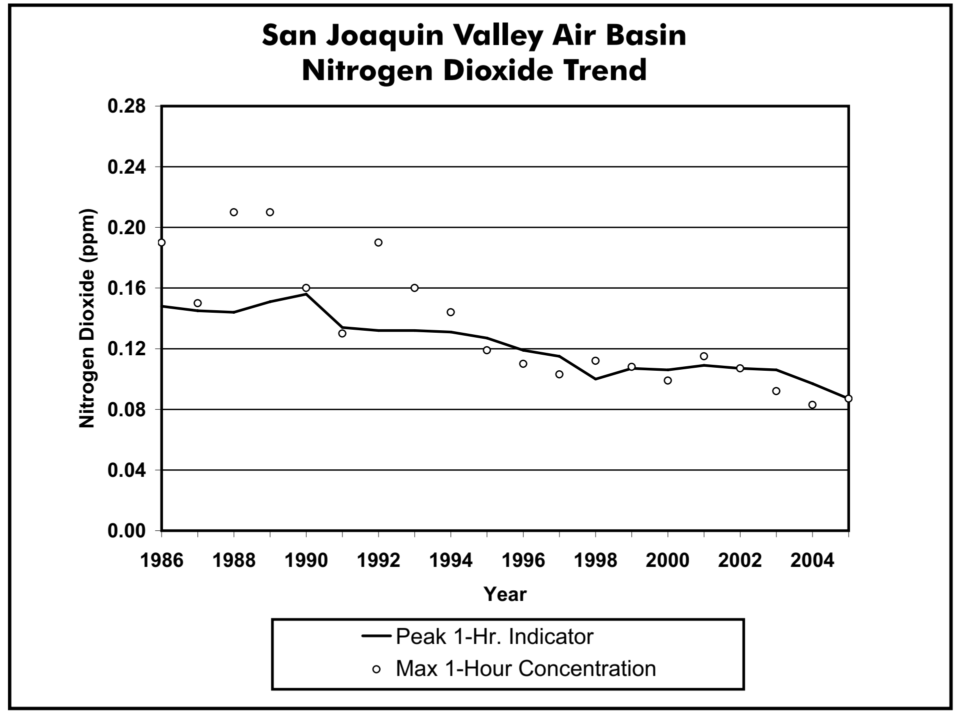

Figure 4-43

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator (State)	0.148	0.145	0.144	0.151	0.156	0.134	0.132	0.132	0.131	0.127	0.119	0.115	0.100	0.107	0.106	0.109	0.107	0.106	0.097	0.087
Max. 1-Hr. Concentration	0.190	0.150	0.210	0.210	0.160	0.130	0.190	0.160	0.144	0.119	0.110	0.103	0.112	0.108	0.099	0.115	0.107	0.092	0.083	0.087
Max. Annual Average	0.030	0.030	0.032	0.033	0.031	0.030	0.027	0.024	0.024	0.029	0.029	0.024	0.023	0.027	0.024	0.022	0.024	0.020	0.018	0.021

Table 4-39

San Diego Air Basin

Introduction - Area Description

The San Diego Air Basin lies in the southwest corner of California and comprises all of San Diego County. However, the population and emissions are concentrated mainly in the western portion of the County. The air basin covers 4,200 square miles, includes about eight percent of the State's population, and produces about seven percent of the State's criteria pollutant emissions. Because of its southerly location and proximity to the ocean, much of the San Diego Air Basin has a relatively mild climate. Higher temperatures and seasonal variations are experienced further inland.

Air quality in the San Diego Air Basin is impacted not only by local emissions, but also by pollutants transported from other areas -- in particular, ozone and ozone precursor emissions transported from the South Coast Air Basin and Mexico. Although the impact of transport is particularly important on days with high ozone concentrations, transported pollutants and emissions cannot be blamed entirely for the ozone problem in the San Diego area. Studies show that emissions from the San Diego Air Basin are sufficient, on their own, to cause ozone violations.

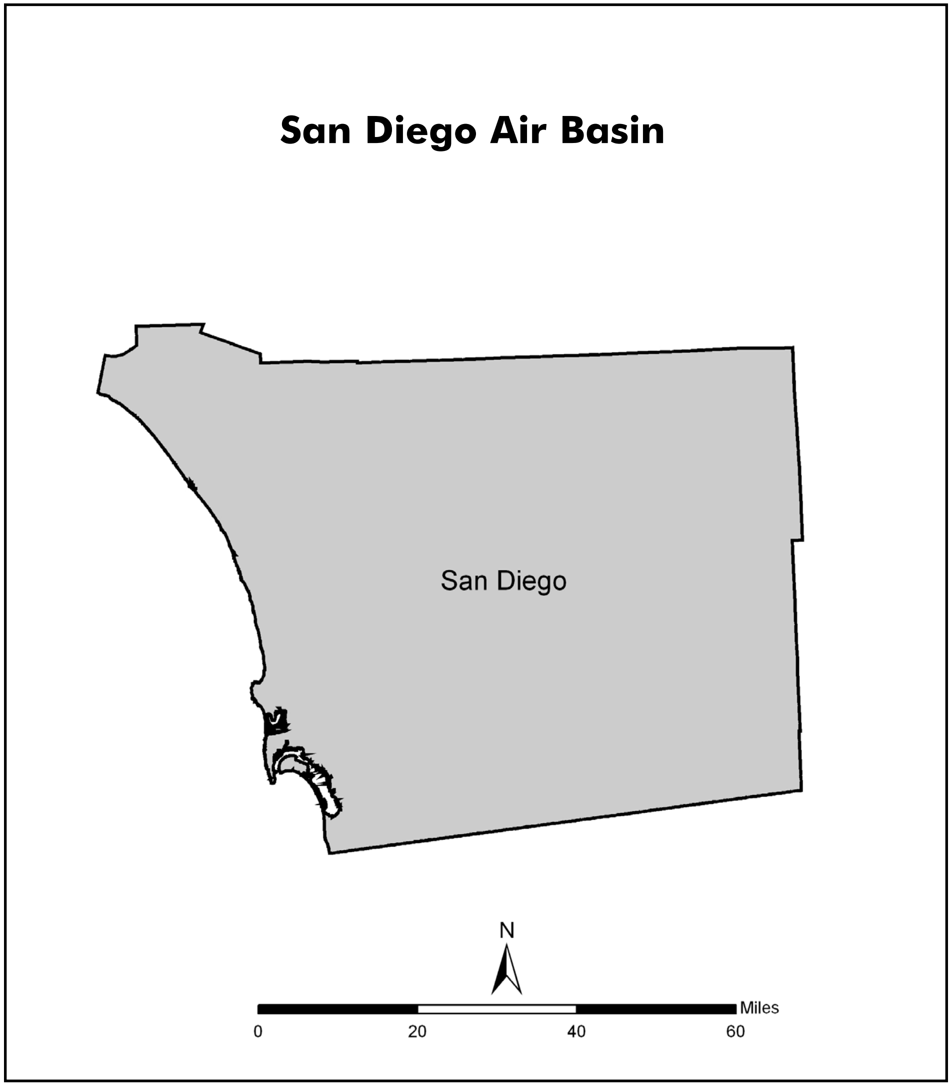

Figure 4-44

San Diego Air Basin

Emission Trends and Forecasts

Emissions of NO_x, ROG, PM_{10}, and CO in the San Diego Air Basin have been following the statewide trends since 1975. These trends are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources (both on-road and other) are by far the largest contributors to NO_x, ROG, and CO emissions in the San Diego Air Basin. The majority of the PM_{10} emissions are from area-wide sources. The emission levels for SO_x have also followed the statewide trends since 1975. The SO_x emissions are forecasted to increase in future years due to predicted growth in shipping activities.

San Diego Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_x	284	268	271	305	268	232	193	160	129	111
ROG	448	436	401	333	261	213	172	151	141	138
PM_{10}	69	77	86	104	99	107	116	121	127	134
$PM_{2.5}$	27	28	25	30	29	31	31	32	33	35
SO_x	45	47	20	24	8	4	4	5	7	11
CO	3389	3066	2897	2517	1787	1333	955	753	630	564

Table 4-40

San Diego Air Basin

Population and VMT

Population in the San Diego Air Basin during the 1980-2020 period is projected to nearly double: from almost 1.9 million in 1980 to over 3.6 million in 2020. During this same time period, the number of vehicle miles traveled each day is projected to triple, from over 32 million miles per day in 1980 to nearly 97 million miles per day in 2020. As in other parts of California, overall air quality in the San Diego Air Basin has improved, despite high growth rates, indicating the benefits of cleaner technologies.

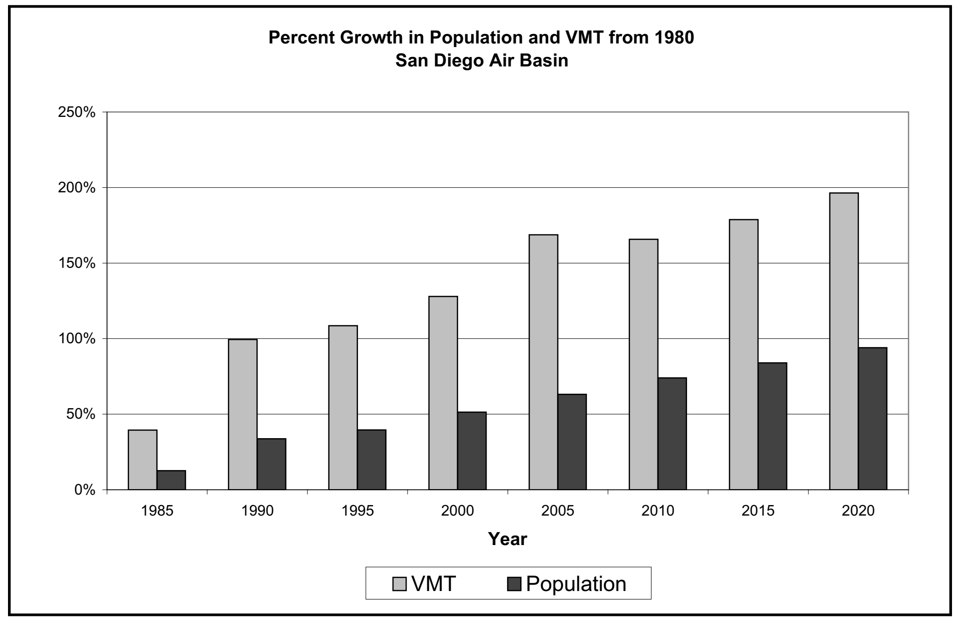

Figure 4-45

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1873300	2109300	2504897	2615201	2836158	3057000	3258951	3446262	3633572
Avg. Daily VMT/1000	32722	45636	65250	68235	74567	87944	86948	91223	96987

Table 4-41

San Diego Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursor NO_x increase between 1975 and 1990 and decrease thereafter. ROG emissions have been decreasing overall since 1975. These decreases are mostly due to decreased emissions from motor vehicles, brought about by stricter motor vehicle emission standards. Stationary and area-wide source emissions of ROG have remained mostly unchanged over the last 20 years, with stricter emission standards offsetting industrial and population growth.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***284***	***268***	***271***	***305***	***268***	***232***	***193***	***160***	***129***	***111***
Stationary Sources	48	32	17	19	16	14	9	10	10	10
Area-wide Sources	2	3	3	3	3	3	3	3	3	3
On-Road Mobile	186	176	187	203	178	146	113	88	64	48
Gasoline Vehicles	172	159	160	165	141	104	64	45	32	24
Diesel Vehicles	13	17	26	38	37	42	50	43	31	24
Other Mobile	48	58	65	80	70	70	68	60	53	50
Gasoline Fuel	3	4	5	6	6	6	7	6	6	6
Diesel Fuel	38	47	52	65	55	54	49	41	32	25
Other Fuel	7	8	8	9	9	11	12	13	15	20

Table 4-42

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***448***	***436***	***401***	***333***	***261***	***213***	***172***	***151***	***141***	***138***
Stationary Sources	28	44	42	38	32	31	32	34	36	39
Area-wide Sources	32	37	41	44	39	39	36	37	38	40
On-Road Mobile	351	310	268	200	142	96	63	45	34	29
Gasoline Vehicles	350	308	265	196	139	93	60	42	32	27
Diesel Vehicles	2	2	3	4	3	3	3	3	2	2
Other Mobile	37	43	50	52	49	46	42	35	32	30
Gasoline Fuel	28	33	39	39	36	35	31	26	24	23
Diesel Fuel	5	7	8	10	9	8	7	6	4	3
Other Fuel	3	3	3	3	3	4	4	4	4	4

Table 4-43

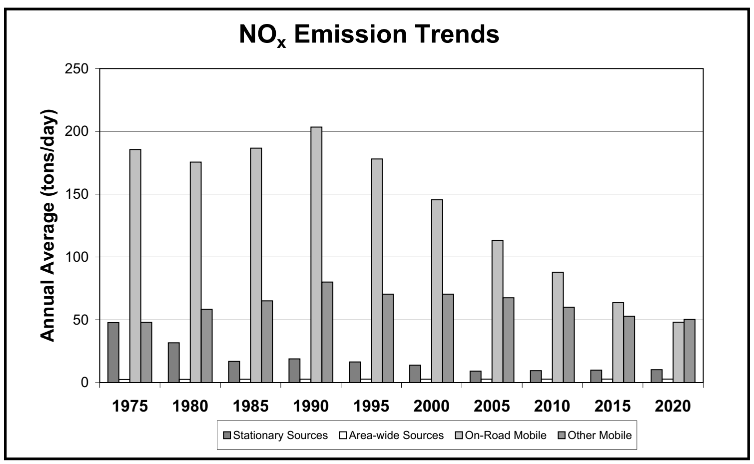

Figure 4-46

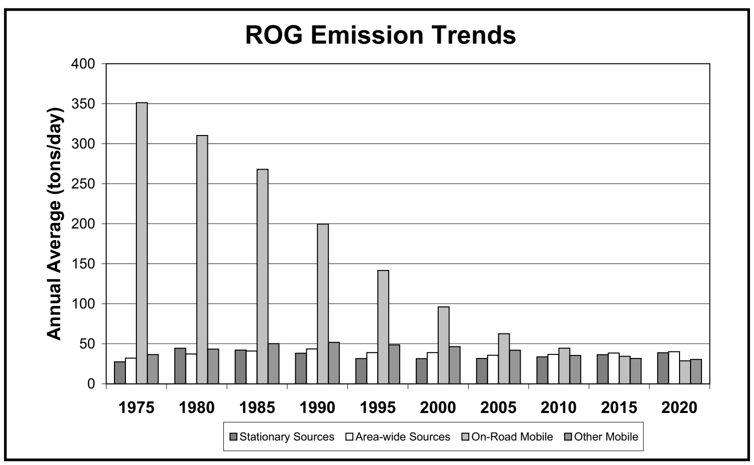

Figure 4-47

San Diego Air Basin

Ozone Air Quality Trend

Both the peak indicator and the number of days above the State and national ozone standards have decreased substantially over the last 20 years. The peak 8-hour ozone indicator shows an overall decline of 34 percent from 1986 to 2005. The number of State and national 8-hour standard exceedance days has dropped even more. There were 159 State 8-hour standard exceedance days during 1986 compared with 68 during 2006. This represents a decrease of about 67 percent in the three-year average of the State standard exceedance days. During 1986, there were 81 national 8-hour standard exceedance days compared with 14 during 2006.

The San Diego Air Basin is the only one of the five major air basins the ARB has not identified as a transport contributor to a downwind area. The San Diego area is, however, a transport receptor. While it is clear that additional local emission controls will be needed to reach attainment of the ozone standards in the San Diego area, because of transport, future air quality in this area will also be affected by emission controls and growth in the South Coast Air Basin and, to some extent, Mexico.

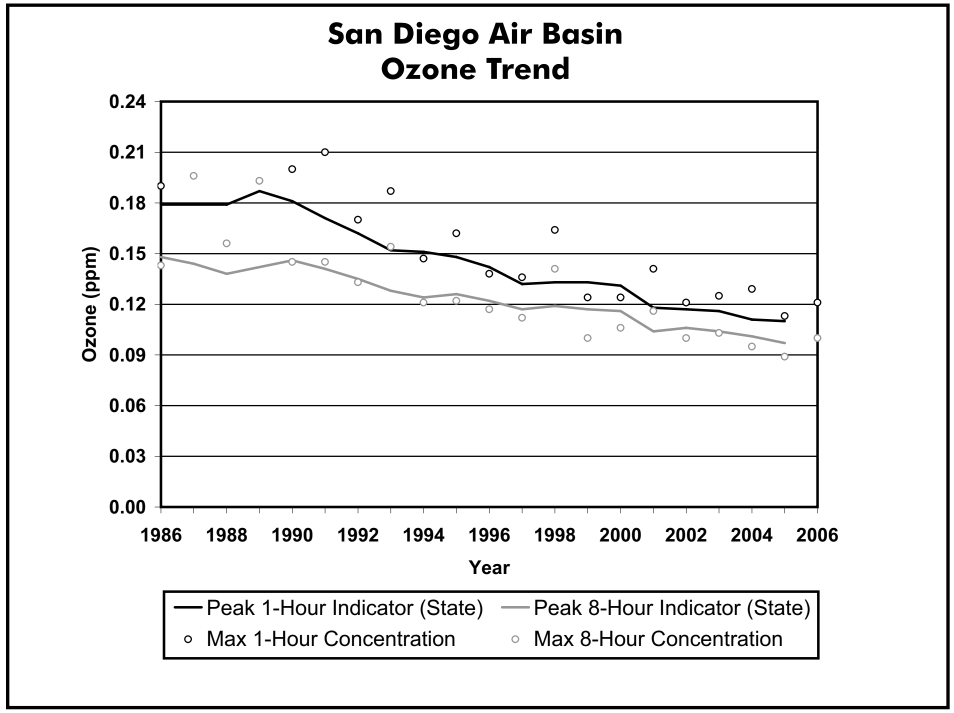

Figure 4-48

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[1]
Peak 8-Hour Indicator (State)	0.148	0.144	0.138	0.142	0.146	0.141	0.135	0.128	0.124	0.126	0.122	0.117	0.119	0.117	0.116	0.104	0.106	0.104	0.101	0.097	
Avg. of 4th High 8-Hr. in 3 Yrs	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089	0.086	
Peak 1-Hour Indicator (State)	0.179	0.179	0.179	0.187	0.181	0.171	0.162	0.152	0.151	0.148	0.142	0.132	0.133	0.133	0.131	0.118	0.117	0.116	0.111	0.110	
4th High 1-Hr. in 3 Yrs[2]	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.137	0.133	0.131	0.130	0.118	0.118	0.118	0.115	0.112	
Max. 8-Hr. Concentration	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095	0.089	0.100
Maximum 1-Hr. Concentration	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129	0.113	0.121
Days Above State 8-Hr. Std.	159	160	189	189	167	144	133	127	122	127	89	73	88	74	75	64	56	59	43	51	68
Days Above Nat. 8-Hr. Std.	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8	5	14
Days Above State 1-Hr. Std.	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12	16	23

[1] Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

[2] The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-44

San Diego Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} are projected to almost double in the San Diego Air Basin between 1975 and 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 70 percent of the ambient PM_{10} in the San Diego Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***69***	***77***	***86***	***104***	***99***	***107***	***116***	***121***	***127***	***134***
Stationary Sources	18	13	7	8	9	8	10	11	12	13
Area-wide Sources	43	55	68	82	79	87	94	99	104	110
On-Road Mobile	3	4	5	6	5	5	6	5	5	5
Gasoline Vehicles	2	2	2	3	3	3	4	4	4	5
Diesel Vehicles	1	2	3	4	2	2	2	2	1	1
Other Mobile	5	6	7	8	6	6	6	6	6	6
Gasoline Fuel	0	0	1	1	1	1	1	1	1	2
Diesel Fuel	3	3	4	5	3	3	3	2	2	1
Other Fuel	2	2	2	2	2	2	2	3	3	3

Table 4-45

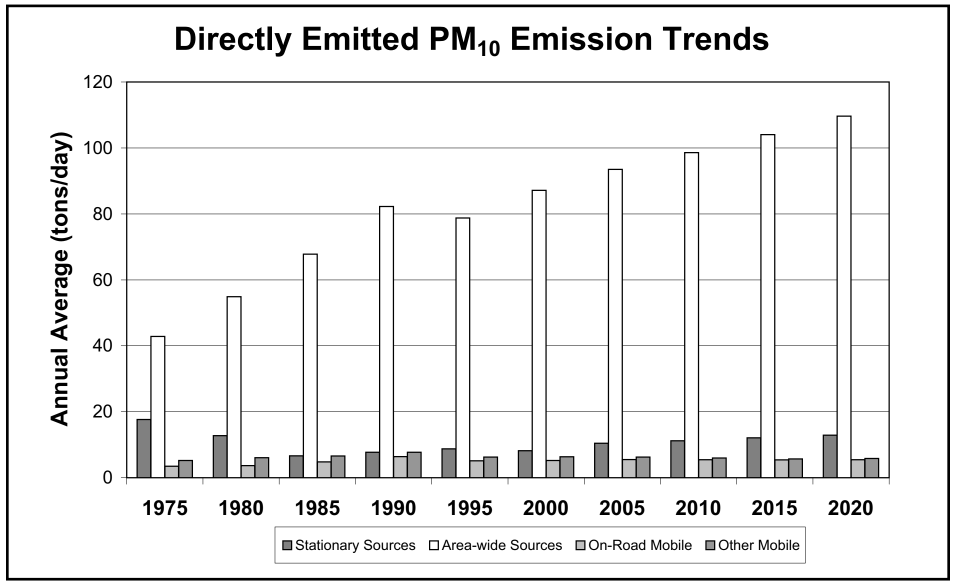

Figure 4-49

San Diego Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ increased steadily in the San Diego Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 50 percent of the ambient $PM_{2.5}$ in the San Diego Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***27***	***28***	***25***	***30***	***29***	***31***	***31***	***32***	***33***	***35***
Stationary Sources	12	10	4	4	6	6	6	6	7	7
Area-wide Sources	8	10	12	14	14	15	16	17	18	19
On-Road Mobile	3	3	4	5	4	4	4	4	4	4
Gasoline Vehicles	1	1	1	2	2	2	2	2	3	3
Diesel Vehicles	1	2	3	3	2	2	2	1	1	1
Other Mobile	5	6	6	7	6	6	6	5	5	5
Gasoline Fuel	0	0	0	1	1	1	1	1	1	1
Diesel Fuel	3	3	4	4	3	3	3	2	1	1
Other Fuel	2	2	2	2	2	2	2	2	3	3

Table 4-46

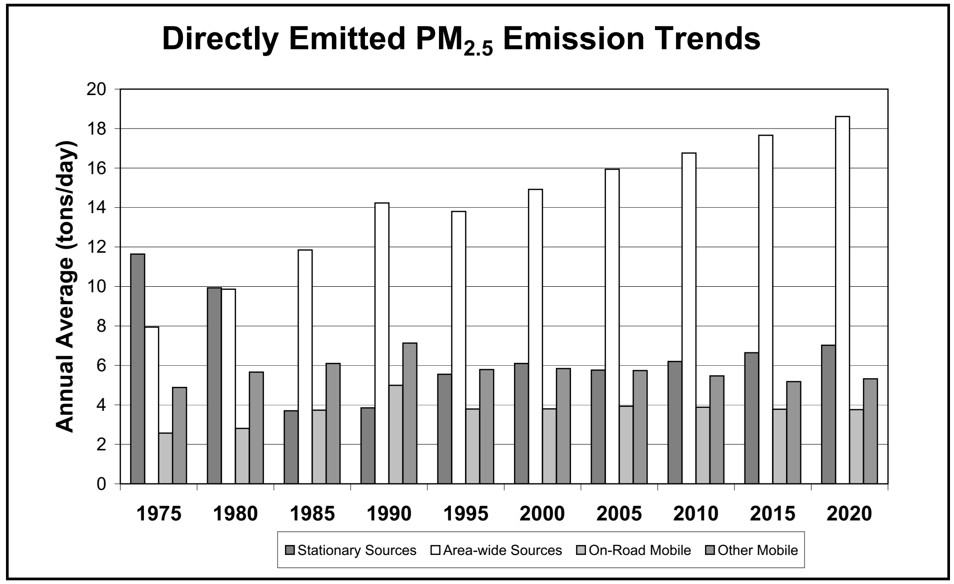

Figure 4-50

San Diego Air Basin

PM_{10} Air Quality Trend

PM_{10} concentrations in the San Diego Air Basin have changed little during the years for which reliable data are available. The annual average for 2005 exceeds the State annual standard and in previous years has been higher than the 1989 value, however in 2005 it dropped below what it was during 1989. The previous apparent lack of progress was, in part, a result of monitoring that began at a new site in 1993, which measured higher concentrations. The maximum 24-hour concentrations exceed the national and State standards. The highest maximum 24-hour concentration of 289 ug/m^3 occurred in 2003, and was due to severe wildfires that occurred in Southern California during October.

During 1989, there were 114 calculated State standard exceedance days, compared with 13 during 2005. During 2005, there were six calculated days over the 24-hour national standard. There is a substantial amount of variability from year-to-year in the 24-hour statistics. This variability is a reflection of meteorology, the 1-in-6-day sampling schedule, and changes in monitoring location. Although ambient PM_{10} concentrations in the San Diego Air Basin are not as high as in some other areas of the State, additional emission controls will be needed to bring this area into attainment with the State standards.

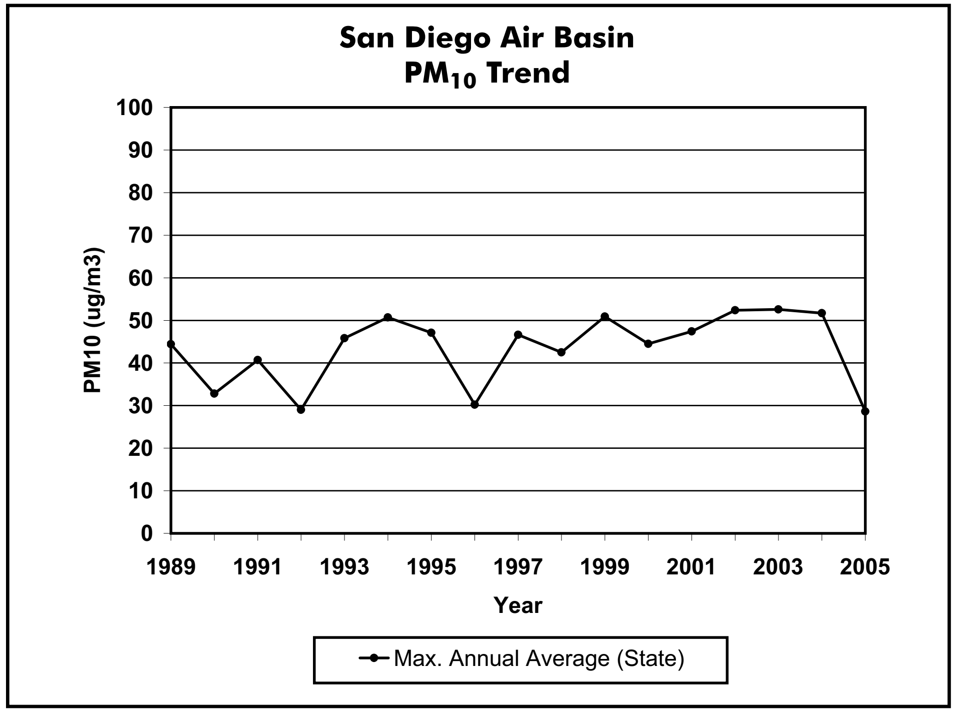

Figure 4-51

PM_{10} (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			80	90	115	81	67	159	129	121	93	125	89	119	136	106	131	289	138	154
Max. 24-Hr. Concentration (Nat)			80	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137	155
Max. Annual Average (State)				44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	42.5	50.9	44.5	47.4	52.4	52.6	51.7	28.6
Max. Annual Average (Nat)			40.0	43.8	37.6	36.4	35.9	45.9	50.7	46.8	38.5	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2	49.8
Calc Days Above State 24-Hr Std				114	38	84	12	134	134	122	12	125	107	124	109	129	173	151	175	13
Calc Days Above Nat 24-Hr Std				0	0	0	0	6	0	0	0	0	0	0	0	0	0	9	0	6

Table 4-47

San Diego Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average $PM_{2.5}$ concentrations (national) in the San Diego Air Basin have declined during the period of 1999 through 2005. The State annual average concentrations also decreased within this period. The highest maximum 24-hour concentration of 239 ug/m^3 occurred in 2003, and was due to severe wildfires that occurred in Southern California during October. The 98th percentile of 24-hour $PM_{2.5}$ concentrations showed substantial variability within this period, a reflection of changes in meteorology and the influence of the 2003 wildfires. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM should help in reducing public exposure to $PM_{2.5}$ in this region.

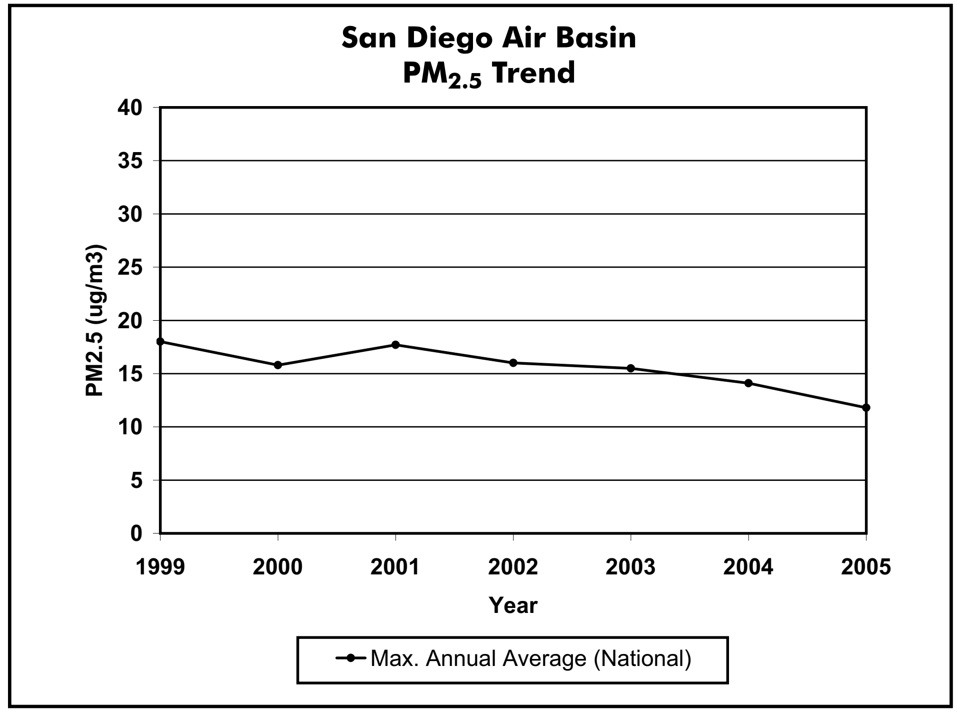

Figure 4-52

$PM_{2.5}$ (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														64.3	66.3	60.0	53.6	239.2	67.3	44.1
Max. 24-Hr. Concentration (Nat)														64.3	66.3	60.0	53.6	239.2	67.3	44.1
98th Percentile of 24-Hr Conc.														35.7	32.5	40.8	36.0	46.9	37.4	30.2
Annual Average (State)																	15.5	14.4	14.1	
Annual Average (Nat)														18.0	15.8	17.7	16.0	15.5	14.1	11.8

Table 4-48

San Diego Air Basin
Carbon Monoxide Emission Trends and Forecasts

CO emissions in the San Diego Air Basin mirror the decreasing statewide trend from 1975 to 2020, even though the VMT are increasing. This is yet another example of how California's motor vehicle control program is having a positive impact on CO emissions.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***3389***	***3066***	***2897***	***2517***	***1787***	***1333***	***955***	***753***	***630***	***564***
Stationary Sources	30	29	28	27	26	40	27	26	25	25
Area-wide Sources	23	25	27	29	27	28	28	28	29	30
On-Road Mobile	3169	2799	2586	2145	1448	1007	657	456	327	251
Gasoline Vehicles	3164	2792	2574	2130	1434	994	643	444	317	242
Diesel Vehicles	6	8	11	16	14	14	14	13	10	9
Other Mobile	167	213	256	316	286	259	243	243	248	258
Gasoline Fuel	126	165	207	255	231	207	194	193	197	206
Diesel Fuel	17	23	25	34	29	26	22	22	22	23
Other Fuel	24	26	24	27	26	26	27	28	28	29

Table 4-49

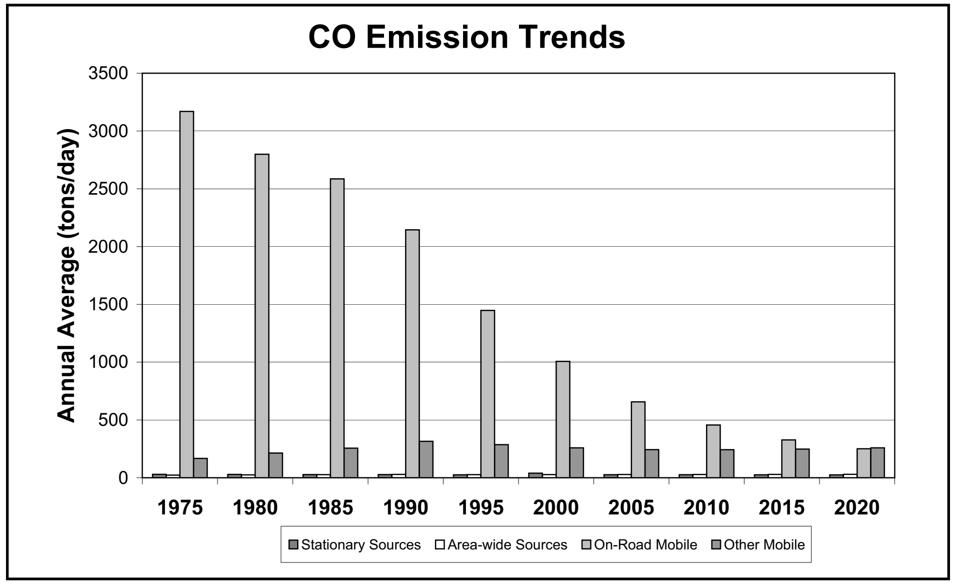

Figure 4-53

San Diego Air Basin

Carbon Monoxide Air Quality Trend

The peak 8-hour indicator for CO in the San Diego Air Basin decreased substantially over the trend period: an almost 57 percent decrease from 1986 to 2005. As a result of these decreases, the national CO standards had not been exceeded in the San Diego Air Basin since 1989. However, in 2003 the CO standards were exceeded due to extensive wildfires that impacted air quality throughout Southern California. This exceedance does not impact San Diego's attainment status, because it qualifies as an exceptional event.

With existing and anticipated motor vehicle and clean fuels regulations, ambient CO concentrations should continue to decline. This should be sufficient to maintain a salubrious level of CO in this area.

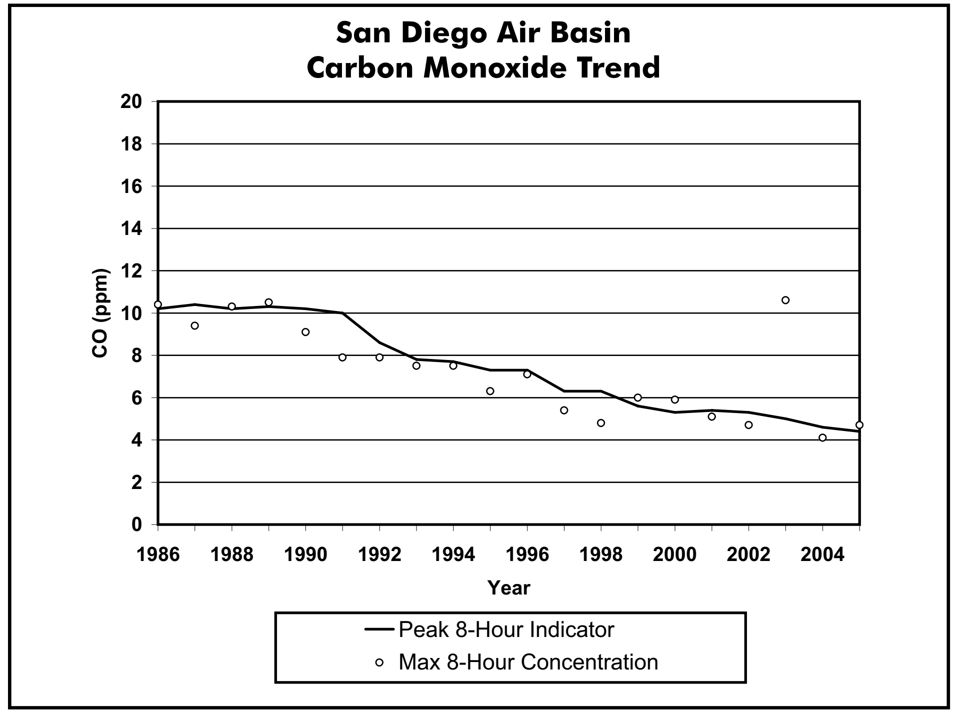

Figure 4-54

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator (State)	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6	4.4
Max. 1-Hr. Concentration	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9	7.9
Max. 8-Hr. Concentration (State)	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1	4.7
Days Above State 8-Hr. Std.	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Days Above Nat. 8-Hr. Std.	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Table 4-50

San Diego Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

NO_x and NO_2 emissions in the San Diego Air Basin follow the declining statewide trend from 1990 to 2020. The continued adoption of more stringent motor vehicle and stationary source emission standards should continue to reduce NO_2 emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***284***	***268***	***271***	***305***	***268***	***232***	***193***	***160***	***129***	***111***
Stationary Sources	48	32	17	19	16	14	9	10	10	10
Area-wide Sources	2	3	3	3	3	3	3	3	3	3
On-Road Mobile	186	176	187	203	178	146	113	88	64	48
Gasoline Vehicles	172	159	160	165	141	104	64	45	32	24
Diesel Vehicles	13	17	26	38	37	42	50	43	31	24
Other Mobile	48	58	65	80	70	70	68	60	53	50
Gasoline Fuel	3	4	5	6	6	6	7	6	6	6
Diesel Fuel	38	47	52	65	55	54	49	41	32	25
Other Fuel	7	8	8	9	9	11	12	13	15	20

Table 4-51

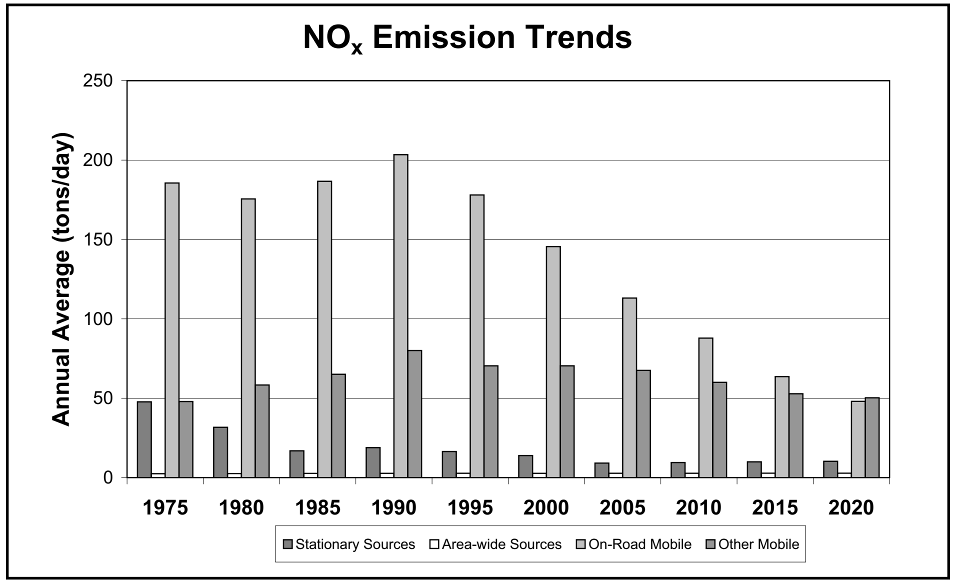

Figure 4-55

San Diego Air Basin

Nitrogen Dioxide Air Quality Trend

The San Diego Air Basin attains both the State and national NO_2 standards. Since 1990 ambient concentrations have been well below the levels of both the State and national standards. Data show that the peak 1-hour indicator decreased over 37 percent from 1986 to 2005.

Because NO_x emissions contribute to ozone, as well as to NO_2, many of the ozone control measures help reduce ambient NO_2 concentrations. Furthermore, NO_x emission controls are a critical part of the ozone control strategy. As a result, these controls should ensure continued attainment of the State and national NO_2 standards.

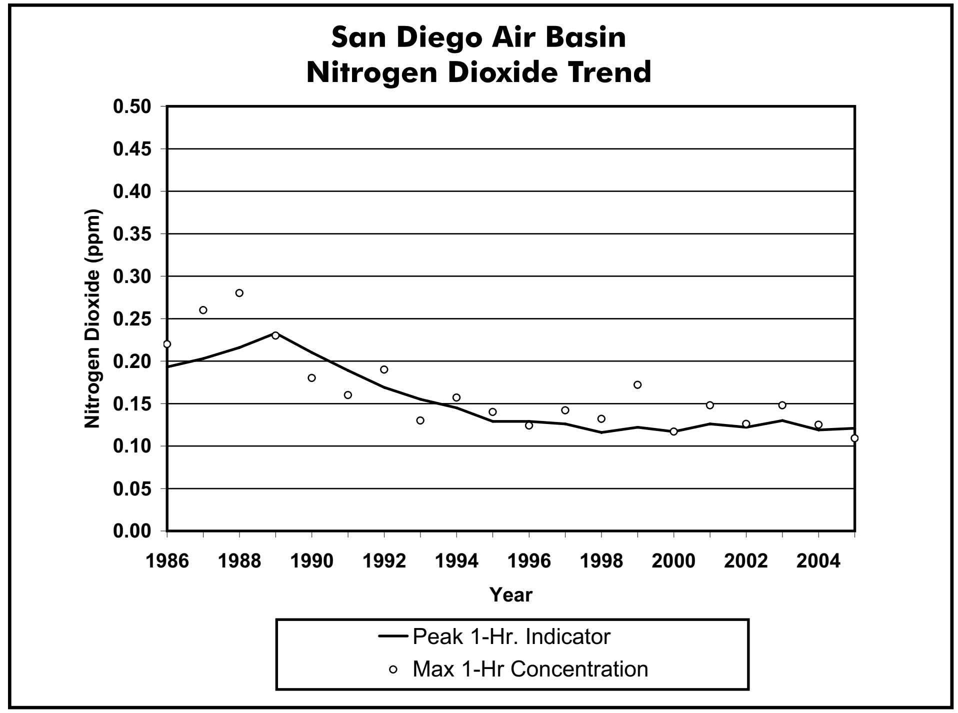

Figure 4-56

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator (State)	0.193	0.203	0.216	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119	0.121
Max. 1-Hr. Concentration	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125	0.109
Max. Annual Average	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023	0.015

Table 4-52

Sacramento Valley Air Basin

Introduction - Area Description

The Sacramento Valley Air Basin is home to California's capital. Located in the northern portion of the Central Valley, the Sacramento Valley Air Basin includes Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties, the western urbanized portion of Placer County, and the northeastern portion of Solano County. The Sacramento Valley Air Basin occupies 14,994 square miles and has a population of more than two million people.

Because of its inland location, the climate of the Sacramento Valley Air Basin is more extreme than that of the San Francisco Bay Area or South Coast air basins. The winters are generally cool and wet, while the summers are hot and dry.

Emissions from the urbanized portion of the basin (Sacramento, Yolo, Solano, and Placer Counties) dominate the emission inventory for the Sacramento Valley Air Basin, and on-road motor vehicles are the primary source of emissions in the metropolitan area. While pollutant concentrations have generally declined over the years, additional regulations will be needed to attain the State and national ambient air quality standards in this air basin.

Note: The Sacramento Metropolitan Nonattainment Area includes the southern part of the Air Basin, as well as the western portion of El Dorado County and the western portion of Placer County.

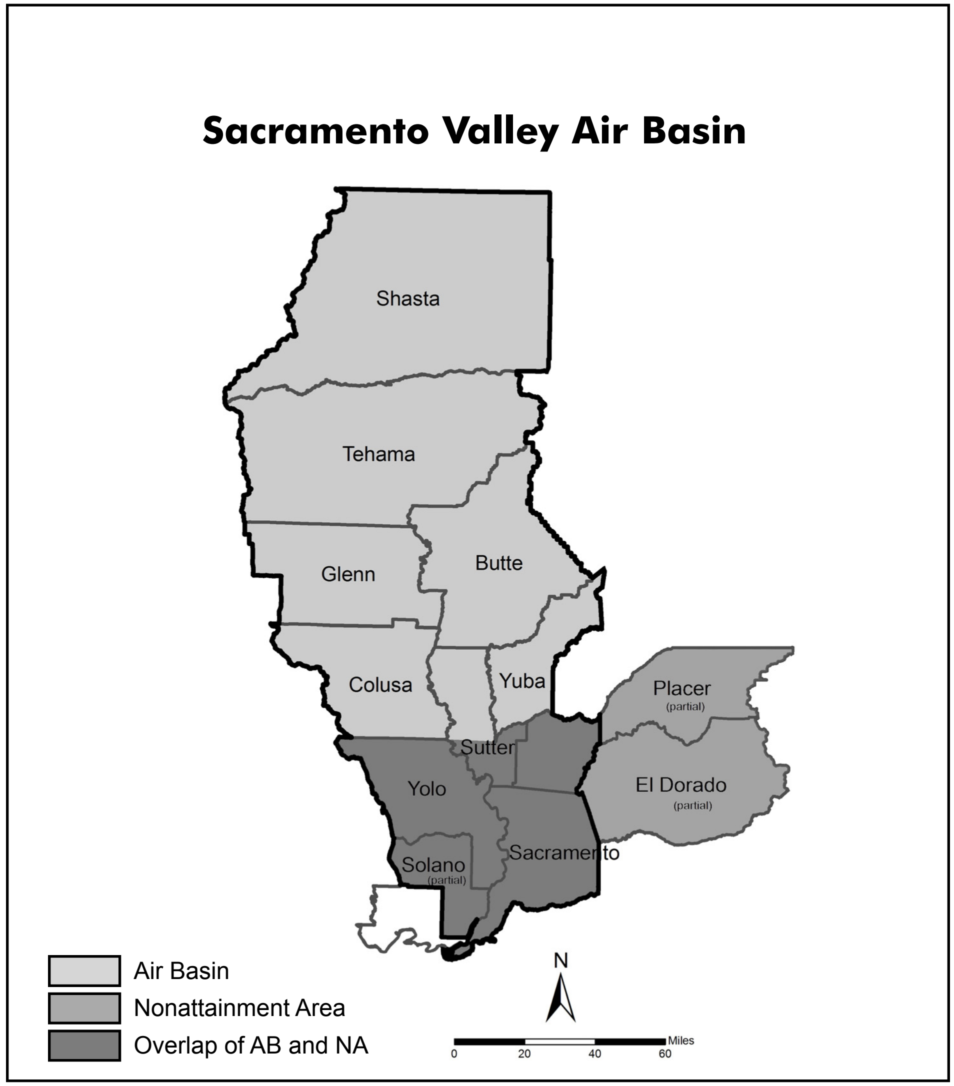

Figure 4-57

Sacramento Valley Air Basin

Emission Trends and Forecasts

The emission levels in the Sacramento Valley Air Basin are trending downward from 1990 to 2020 for NO_x, and downward from 1975 to 2020 for ROG and CO. The decreases in NO_x, ROG, and CO are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources are by far the largest contributors to NO_x, ROG, and CO emissions in the Sacramento Valley Air Basin. PM_{10} and $PM_{2.5}$ emissions are increasing from 1975 to 2020. The emission levels for SO_x have declined after 1990. Most of the reduction in SO_x emissions is seen for on-road motor vehicles and other mobile sources.

Sacramento Valley Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_x	335	351	342	382	354	318	290	250	200	164
ROG	461	447	415	362	301	243	207	183	170	165
PM_{10}	199	206	213	226	215	222	227	232	237	242
$PM_{2.5}$	73	71	73	81	73	74	73	74	75	76
SO_x	25	23	26	30	9	6	5	4	4	4
CO	3116	3113	2899	2573	1935	1520	1223	1032	908	835

Table 4-53

Sacramento Valley Air Basin

Population and VMT

Between 1980 and 2020, population in the Sacramento Valley Air Basin is projected to grow at a higher rate than the statewide average- a 140 percent increase compared with an 84 percent increase statewide. Population is projected to grow from 15 million in 1980 to 36 million in 2020. During this same period, the increase in the number of vehicle miles traveled each day is projected to be higher than the overall statewide value: a 200 percent increase in the Sacramento Valley Air Basin. VMT are projected to increase from about 30 million miles in 1980 to nearly 90 million miles in 2020.

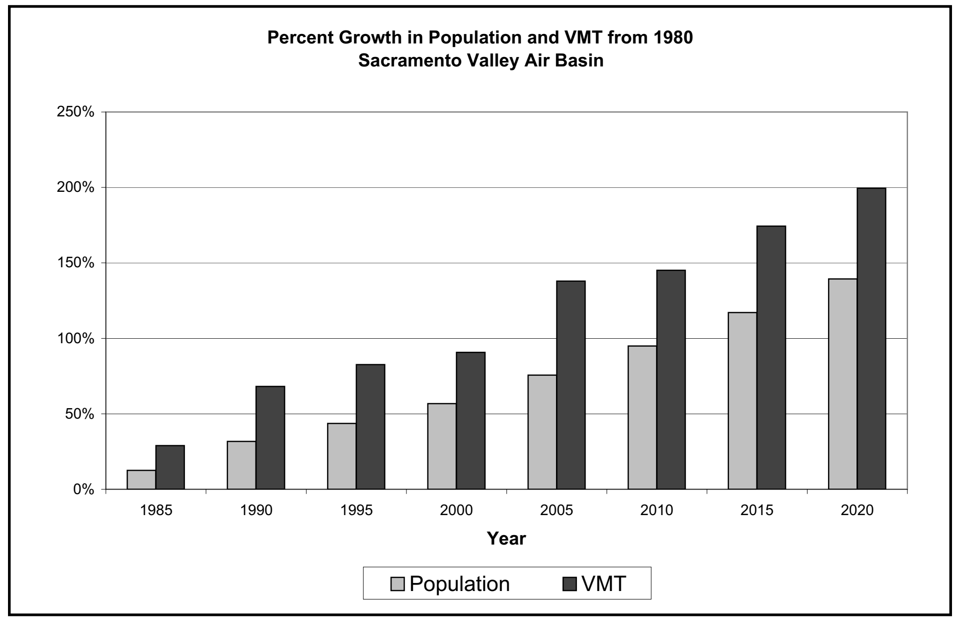

Figure 4-58

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1500924	1688217	1977544	2155490	2353225	2636019	2925202	3259235	3593262
Avg. Daily VMT/1000	30025	38728	50471	54826	57268	71433	73601	82374	89914

Table 4-54

Sacramento Valley Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of NO_x decreased from 1990 to 2005 and are projected to continue decreasing from 2005 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO_x emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO_x emissions. ROG emissions have been decreasing for the last 30 years due to more stringent motor vehicle standards and new rules for control of ROG from various industrial coating and solvent operations.

NO_x Emission Trends (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
All Sources	***335***	***351***	***342***	***382***	***354***	***318***	***290***	***250***	***200***	***164***
Stationary Sources	38	32	31	45	46	42	38	39	39	38
Area-wide Sources	9	9	9	10	9	9	9	9	9	9
On-Road Mobile	186	194	202	215	196	167	154	127	88	62
Gasoline Vehicles	156	158	151	144	123	88	59	42	30	22
Diesel Vehicles	30	35	51	72	74	79	96	85	58	40
Other Mobile	102	116	100	112	102	100	88	75	64	54
Gasoline Fuel	3	4	5	6	5	5	7	7	7	6
Diesel Fuel	96	108	92	103	93	90	77	64	53	43
Other Fuel	3	4	4	3	4	5	4	4	4	5

Table 4-55

ROG Emission Trends (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
All Sources	***461***	***447***	***415***	***362***	***301***	***243***	***207***	***183***	***170***	***165***
Stationary Sources	72	50	52	49	41	30	31	32	35	37
Area-wide Sources	58	65	63	70	67	65	61	62	64	66
On-Road Mobile	289	279	244	185	137	94	67	49	36	29
Gasoline Vehicles	285	274	238	177	132	89	61	43	32	26
Diesel Vehicles	4	5	6	8	6	5	6	6	4	3
Other Mobile	42	53	55	58	55	53	47	40	35	33
Gasoline Fuel	29	36	41	43	40	39	35	30	27	26
Diesel Fuel	12	14	12	14	13	12	11	8	6	5
Other Fuel	1	3	2	2	2	2	2	2	2	2

Table 4-56

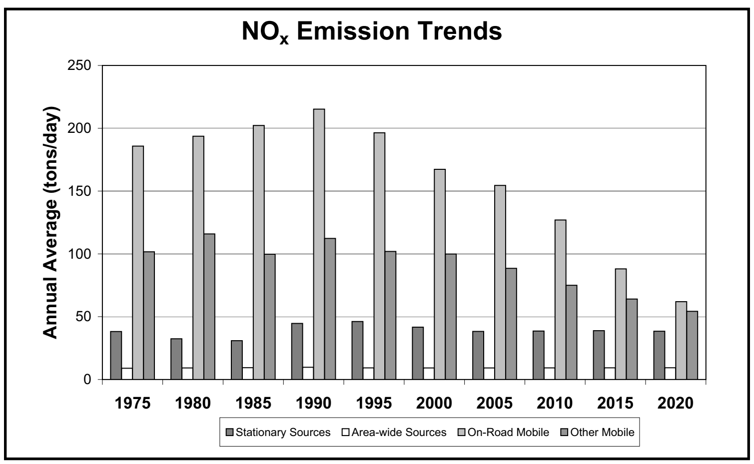

Figure 4-59

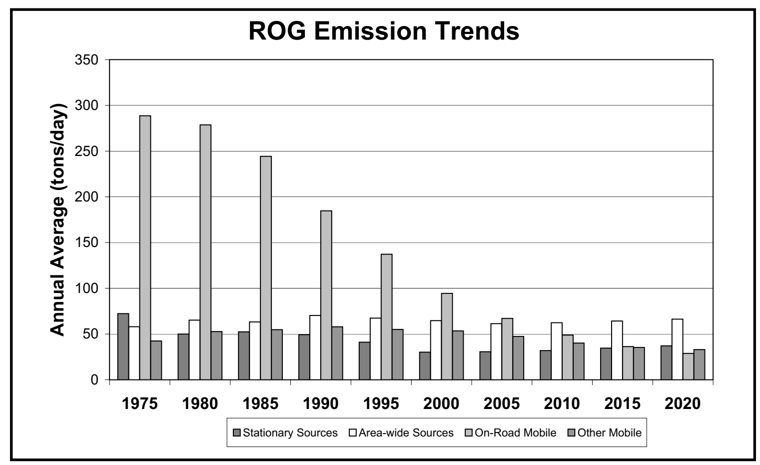

Figure 4-60

Sacramento Valley Air Basin

Ozone Air Quality Trend

Peak ozone values in the Sacramento Valley Air Basin have not declined as quickly over the last several years as they have in other urban areas. The peak 8-hour indicator remained fairly constant from 1986 to 1989. Since 1989, the peak 8-hour indicator has decreased slightly, and the overall decline for the 20-year period is almost 17 percent. Looking at the number of days above the State and national standards, the trend is much more variable. However, the number of exceedance days has declined since 1988. The maximum measured 8-hour concentrations have also decreased, but with more year-to-year variation.

Similar to the San Joaquin Valley, the Sacramento Metropolitan area, which includes the urbanized portion of the Southern Sacramento Valley Air Basin, along with the urbanized portions of El Dorado and Placer Counties in the Mountain Counties Air Basin, is identified as both a transport contributor and receptor. The region is a transport contributor to the Mountain Counties, Upper Sacramento Valley, San Joaquin Valley, and San Francisco Bay Area air basins and is a receptor area for the San Francisco Bay Area and San Joaquin Valley air basins.

The data for the Sacramento Metropolitan Area, on the following page, reflects the portion of the region that is nonattainment for the national ozone standards.

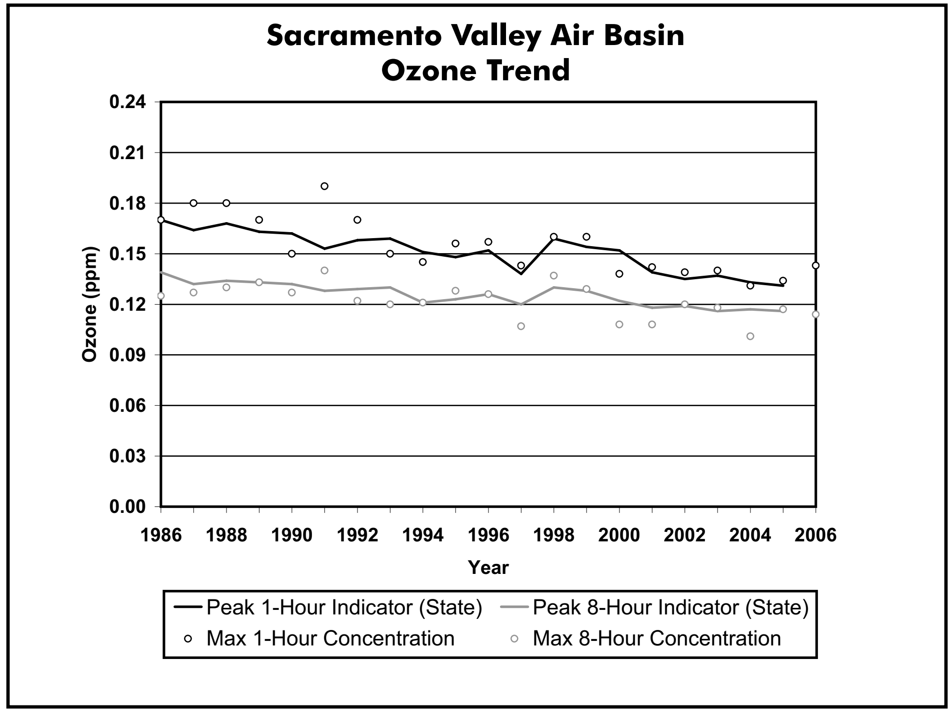

Figure 4-61

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[1]
Peak 8-Hour Indicator (State)	0.139	0.132	0.134	0.133	0.132	0.128	0.129	0.130	0.121	0.123	0.126	0.120	0.130	0.128	0.122	0.118	0.119	0.116	0.117	0.116	
Avg. of 4th High 8-Hr. in 3 Yrs	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.097	0.095	0.101	0.105	0.101	0.101	0.100	0.097	0.097	
Peak 1-Hour Indicator (State)	0.170	0.164	0.168	0.163	0.162	0.153	0.158	0.159	0.151	0.148	0.152	0.138	0.159	0.154	0.152	0.139	0.135	0.137	0.133	0.131	
4th High 1-Hr. in 3 Yrs[2]	0.180	0.160	0.160	0.160	0.160	0.150	0.160	0.150	0.142	0.145	0.145	0.143	0.149	0.149	0.149	0.138	0.134	0.138	0.138	0.131	
Max. 8-Hr. Concentration	0.125	0.127	0.130	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.101	0.117	0.114
Maximum 1-Hr. Concentration	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.131	0.134	0.143
Days Above State 8-Hr. Std.	88	136	125	99	104	111	107	61	113	86	103	60	97	111	81	84	95	92	87	62	88
Days Above Nat. 8-Hr. Std.	50	73	68	37	44	60	56	22	48	40	44	15	60	43	35	37	34	40	20	25	39
Days Above State 1-Hr. Std.	66	94	98	68	50	68	74	34	60	50	58	25	62	59	41	44	46	51	29	33	44

[1] Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

[2] The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-57

Sacramento Metropolitan Area[1]

Ozone Air Quality Table

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006[2]
Peak 8-Hour Indicator (State)	0.139	0.132	0.134	0.133	0.132	0.128	0.129	0.130	0.121	0.123	0.126	0.120	0.130	0.128	0.126	0.119	0.124	0.127	0.126	0.116	
Avg. of 4th High 8-Hr. in 3 Yrs	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.102	0.097	
Peak 1-Hour Indicator (State)	0.170	0.164	0.168	0.163	0.162	0.153	0.158	0.159	0.151	0.148	0.152	0.140	0.159	0.154	0.152	0.139	0.142	0.146	0.143	0.131	
4th High 1-Hr. in 3 Yrs	0.180	0.160	0.160	0.160	0.160	0.150	0.160	0.150	0.142	0.145	0.145	0.145	0.149	0.149	0.149	0.144	0.148	0.148	0.145	0.139	
Max. 8-Hr. Concentration	0.125	0.127	0.138	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.113	0.109	0.137	0.122	0.102	0.117	0.116
Maximum 1-Hr. Concentration	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.145	0.163	0.160	0.138	0.148	0.156	0.145	0.118	0.134	0.139
Days Above State 8-Hr. Std.	81	121	125	114	99	102	113	61	103	80	96	62	72	108	78	88	106	94	81	69	90
Days Above Nat. 8-Hr. Std.	49	65	72	53	43	57	55	24	42	42	48	19	34	48	37	41	47	43	25	35	42
Days Above State 1-Hr. Std.	57	86	99	74	47	65	76	36	54	52	57	25	49	56	45	51	59	53	35	43	50

1 The Sacramento Metropolitan Area includes urbanized portions of the Sacramento Valley Air Basin (Sacramento, Yolo, Placer, and Solano Counties, and part of Sutter County) and all of El Dorado and Placer Counties in the Mountain Counties Air Basin.

2 Preliminary data for 2006 are shown here, however they are subject to change. 2005 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2006.

Table 4-58

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Sacramento Valley Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} increased in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from farming operations, fugitive dust from construction and demolition, and particulates from residential fuel combustion. Emissions of directly emitted PM_{10} from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the Sacramento Valley Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***199***	***206***	***213***	***226***	***215***	***222***	***227***	***232***	***237***	***242***
Stationary Sources	25	20	18	22	17	18	17	18	20	21
Area-wide Sources	163	173	181	187	185	192	197	202	208	212
On-Road Mobile	5	6	7	9	7	6	6	6	6	5
Gasoline Vehicles	2	1	2	2	2	2	3	3	4	4
Diesel Vehicles	3	4	6	7	5	4	4	3	2	1
Other Mobile	7	8	7	8	6	6	6	5	5	4
Gasoline Fuel	1	1	1	1	1	1	1	2	2	2
Diesel Fuel	6	7	6	7	5	4	4	3	2	2
Other Fuel	0	0	0	0	0	0	0	0	0	0

Table 4-59

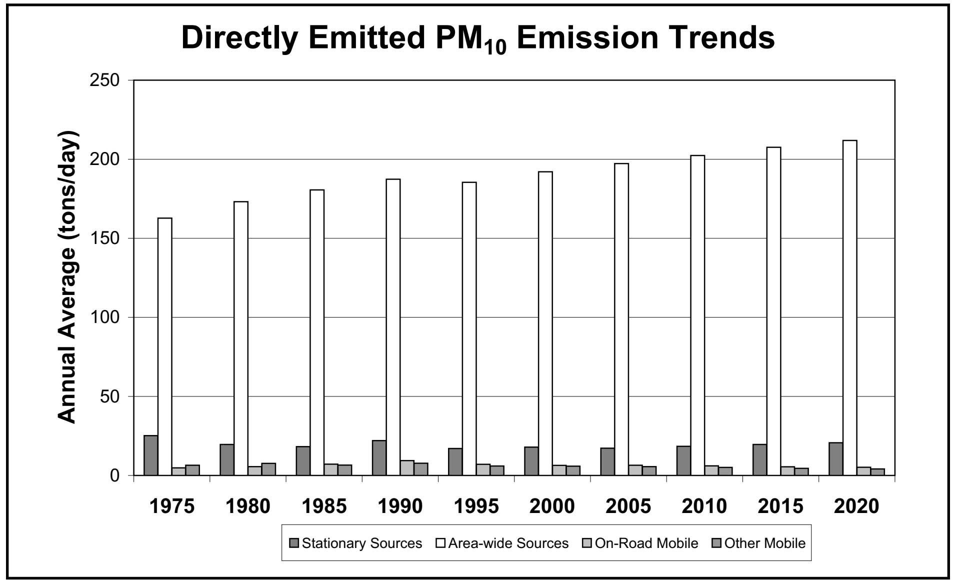

Figure 4-62

Sacramento Valley Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ have remained relatively steady in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to increase slightly through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, fugitive dust from construction and demolition, particulates from residential fuel combustion, and waste burning. Emissions of directly emitted $PM_{2.5}$ from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 70 percent of the ambient $PM_{2.5}$ in the Sacramento Valley Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***73***	***71***	***73***	***81***	***73***	***74***	***73***	***74***	***75***	***76***
Stationary Sources	18	12	11	13	10	10	10	11	11	12
Area-wide Sources	45	48	50	52	52	53	54	55	56	57
On-Road Mobile	4	5	6	8	6	5	5	5	4	4
Gasoline Vehicles	1	1	1	1	1	1	2	2	2	2
Diesel Vehicles	3	4	5	7	5	4	3	3	2	1
Other Mobile	6	7	6	7	5	5	5	4	4	3
Gasoline Fuel	0	1	1	1	1	1	1	1	2	2
Diesel Fuel	5	6	5	6	4	4	4	3	2	1
Other Fuel	0	0	0	0	0	0	0	0	0	0

Table 4-60

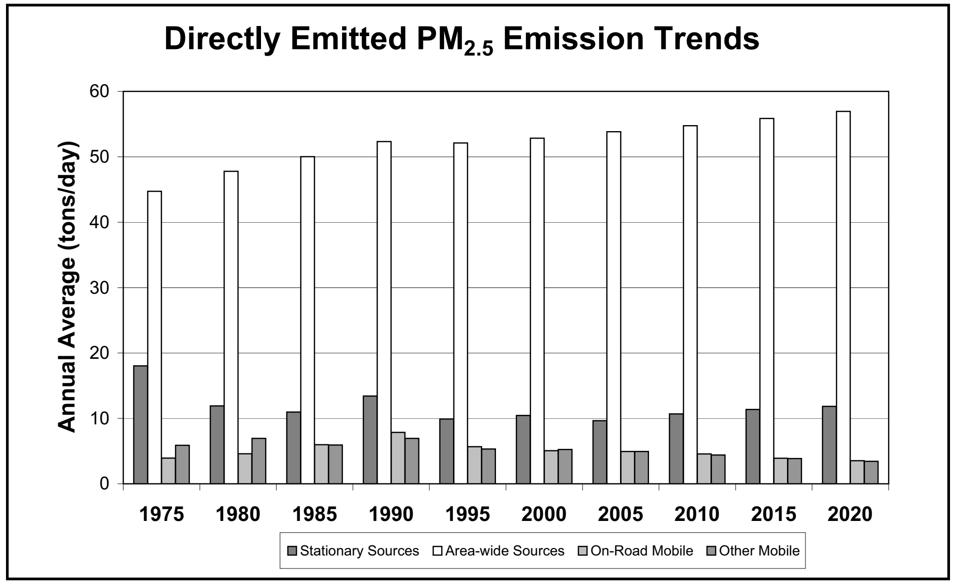

Figure 4-63

Sacramento Valley Air Basin

PM_{10} Air Quality Trend

The annual average (State) PM_{10} concentration in the Sacramento Valley Air Basin shows a fairly steady decline over the trend period, with some variability over the last several years. The three-year average of the annual average (State) shows a decrease of 21 percent from 1991 to 2005. The three-year average of calculated days over the State 24-hour standard decreased by 41 percent from 1991 to 2005. Because many of the sources that contribute to ozone also contribute to PM_{10}, future ozone emission controls should improve PM_{10} air quality.

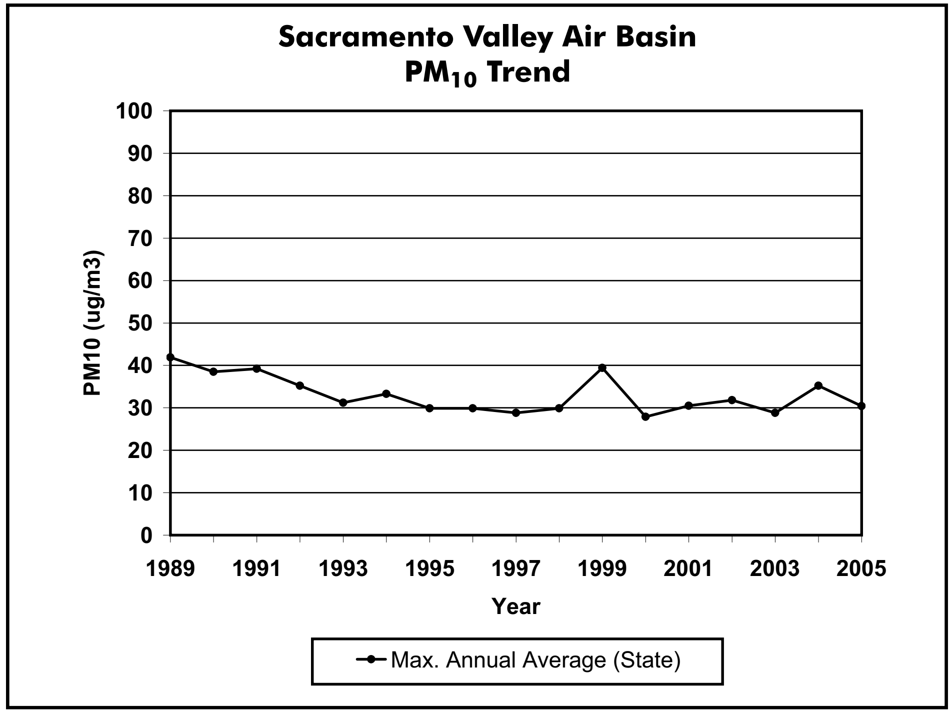

Figure 4-64

PM_{10} (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			100	147	153	136	111	113	154	145	98	126	130	179	90	112	96	123	171	109
Max. 24-Hr. Concentration (Nat)			100	147	153	136	111	113	204	287	98	126	130	275	109	123	145	89	169	110
Max. Annual Average (State)				41.9	38.5	39.2	35.2	31.2	33.3	29.9	29.9	28.8	29.9	39.4	27.9	30.5	31.8	28.8	35.2	30.4
Max. Annual Average (Nat)		38.2	51.2	46.0	51.9	46.4	42.3	36.9	34.5	40.7	32.6	28.6	29.0	38.4	27.9	30.2	30.9	28.4	34.5	27.2
Calc Days Above State 24-Hr Std				82	74	104	70	63	36	57	44	22	60	64	43	50	41	31	80	42
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	1	3	0	0	0	5	0	0	0	0	1	0

Table 4-61

Sacramento Valley Air Basin

$PM_{2.5}$ Air Quality Trend

Overall, annual average (national) $PM_{2.5}$ concentrations in the Sacramento Valley Air Basin decreased slightly during 1999 through 2005. The State annual average concentrations also show a declining trend, although the trends looks less pronounced, due to differences in State and national monitoring methods. The 98th percentile of 24-hour $PM_{2.5}$ concentrations also declined during this seven-year period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

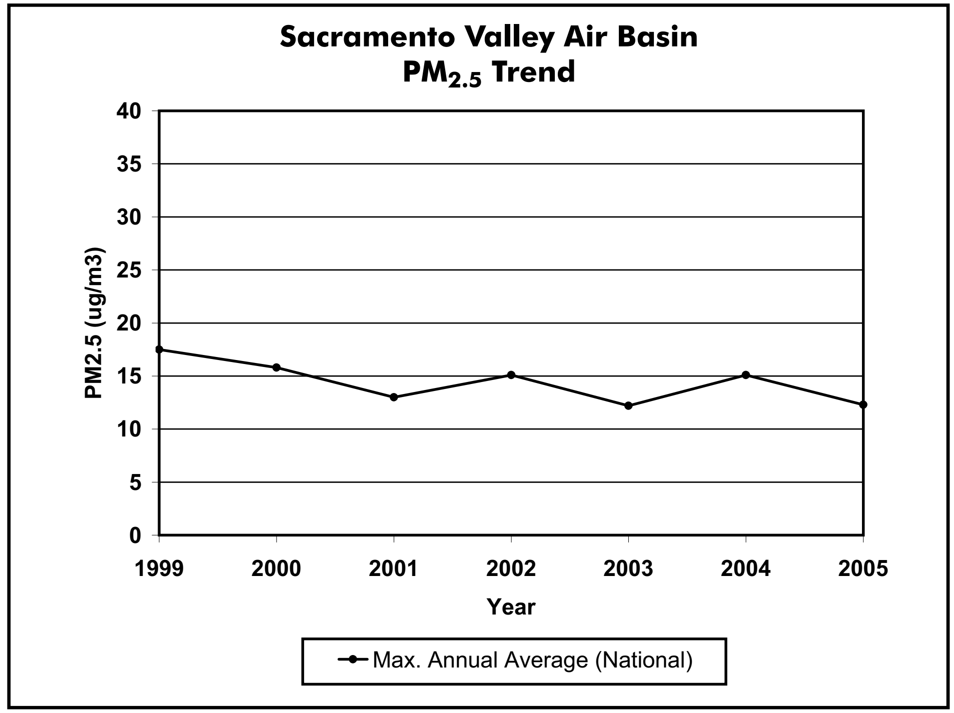

Figure 4-65

$PM_{2.5}$ (ug/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													96.0	108.0	123.1	128.2	96.1	73.2	76.3	82.7
Max. 24-Hr. Concentration (Nat)													96.0	108.0	98.0	78.0	91.0	65.0	65.0	80.0
98th Percentile of 24-Hr Conc.													96.0	84.0	81.0	78.0	77.0	43.0	54.0	54.0
Annual Average (State)														17.5	15.8	11.9	15.1	15.9	16.5	13.8
Annual Average (Nat)														17.5	15.8	13.0	15.1	12.2	15.1	12.3

Table 4-62

Sacramento Valley Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO declined in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to decrease through 2020. Motor vehicles are the largest source of CO emissions. With the introduction of new automotive emission controls to meet more stringent emission standards, motor vehicle CO emissions have been declining since 1975, despite increases in VMT. Stationary and area-wide source CO emissions have remained relatively steady since 1990, with additional emission controls offsetting growth.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***3116***	***3113***	***2899***	***2573***	***1935***	***1520***	***1223***	***1032***	***908***	***835***
Stationary Sources	27	28	15	50	38	40	49	51	53	55
Area-wide Sources	252	265	275	286	283	282	284	286	289	293
On-Road Mobile	2638	2568	2342	1915	1318	927	635	445	312	229
Gasoline Vehicles	2624	2551	2319	1885	1290	902	608	420	292	213
Diesel Vehicles	13	17	23	31	28	26	26	25	20	16
Other Mobile	200	253	267	323	296	270	255	251	254	258
Gasoline Fuel	145	186	209	257	235	212	200	197	199	202
Diesel Fuel	37	44	39	47	43	38	33	31	30	30
Other Fuel	18	23	19	19	19	20	22	23	25	25

Table 4-63

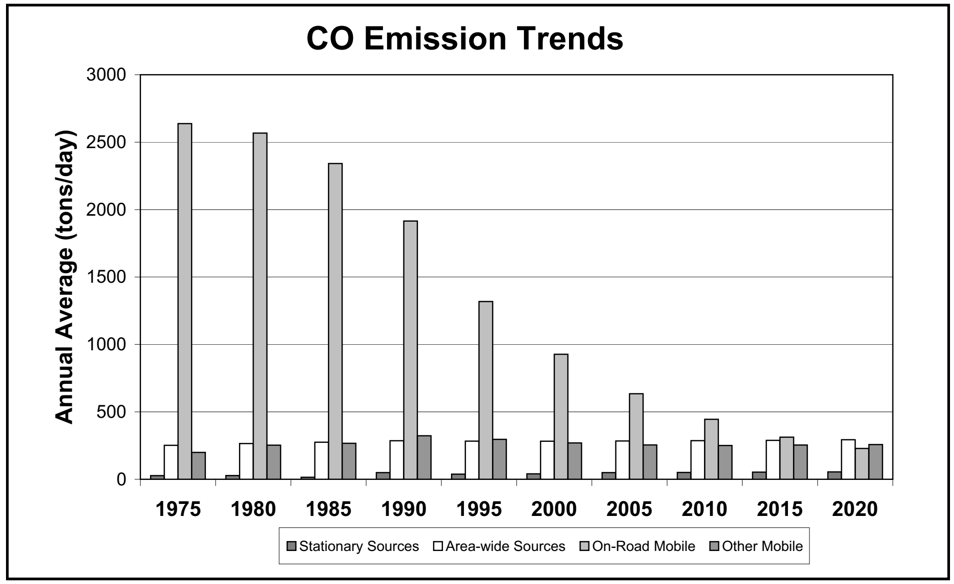

Figure 4-66

Sacramento Valley Air Basin

Carbon Monoxide Air Quality Trend

The trend of the peak 8-hour indicator for CO for the Sacramento Valley Air Basin was relatively flat from 1986 to 1991, with some year-to-year variability that was probably caused by meteorology. Since 1991, indicator values have decreased substantially. The 2005 value was 70 percent lower than the 1991 value. The national CO standards have not been exceeded since 1991, and the State standards were last exceeded in 1993. Much of the decline in ambient CO concentrations is attributable to the introduction of cleaner fuels and newer, cleaner motor vehicles. These controls will help keep the area in attainment for both the State and national CO standards.

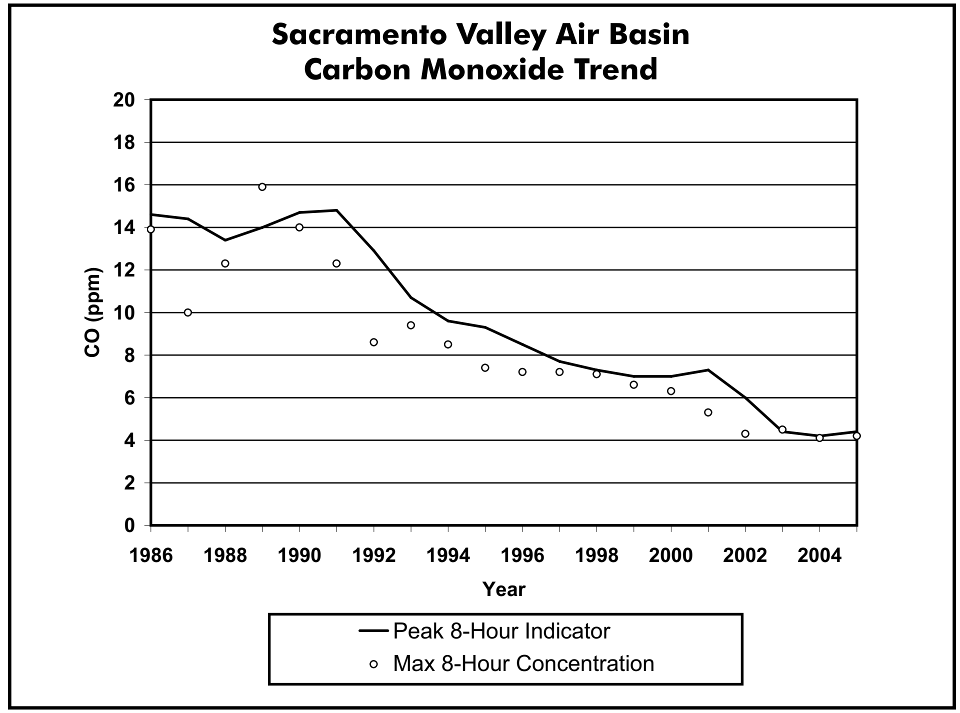

Figure 4-67

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator (State)	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2	4.4
Max. 1-Hr. Concentration	20.0	15.0	17.0	18.0	17.0	15.0	14.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	17.2	7.8	8.5	7.3	8.0
Max. 8-Hr. Concentration (State)	13.9	10.0	12.3	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1	4.2
Days Above State 8-Hr. Std.	13	5	12	22	14	9	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	12	3	9	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-64

Sacramento Valley Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x show a steady decrease from 1990 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO_x emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO_x emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***335***	***351***	***342***	***382***	***354***	***318***	***290***	***250***	***200***	***164***
Stationary Sources	38	32	31	45	46	42	38	39	39	38
Area-wide Sources	9	9	9	10	9	9	9	9	9	9
On-Road Mobile	186	194	202	215	196	167	154	127	88	62
Gasoline Vehicles	156	158	151	144	123	88	59	42	30	22
Diesel Vehicles	30	35	51	72	74	79	96	85	58	40
Other Mobile	102	116	100	112	102	100	88	75	64	54
Gasoline Fuel	3	4	5	6	5	5	7	7	7	6
Diesel Fuel	96	108	92	103	93	90	77	64	53	43
Other Fuel	3	4	4	3	4	5	4	4	4	5

Table 4-65

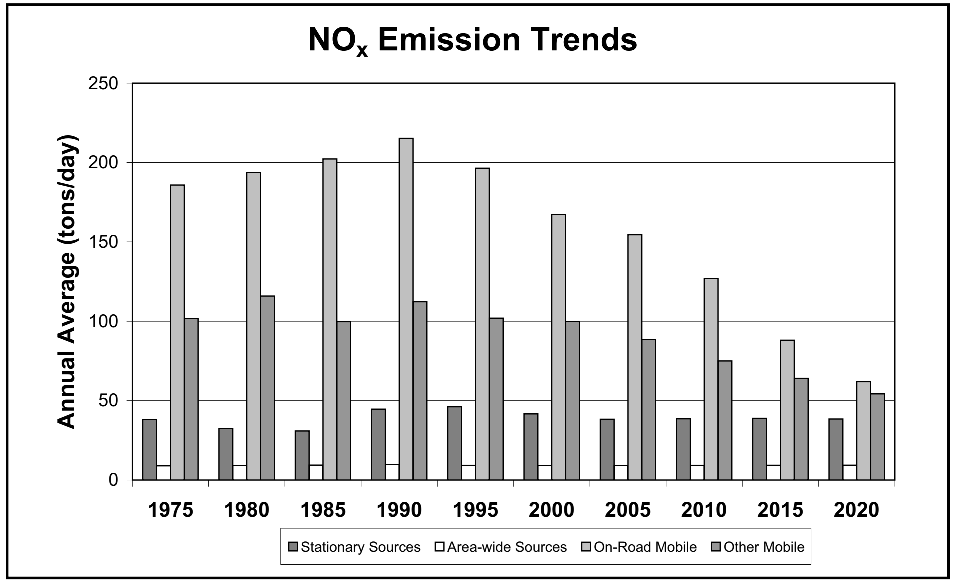

Figure 4-68

Sacramento Valley Air Basin

Nitrogen Dioxide Air Quality Trend

The Sacramento Valley Air Basin has attained both the State and national NO_2 standards for more than 20 years. The peak 1-hour indicator increased from 1986 through 1993, but has declined by 33 percent since 1993. There is more variability in maximum 1-hour concentrations as compared to other areas. This variability may be due to changes in emission sources and may also reflect year-to-year changes in meteorology. However, ambient concentrations are well below the level of the two standards, and a decline in NO_2 concentrations is expected in the coming years.

NO_2 is formed from NO_x emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO_x emissions.

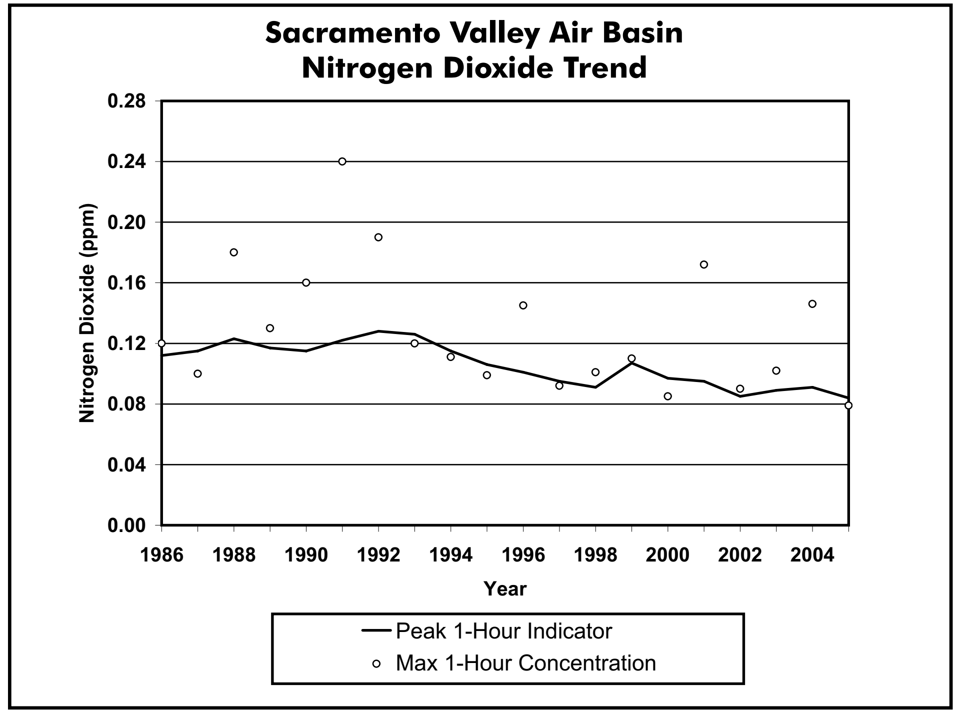

Figure 4-69

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hour Indicator (State)	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.095	0.091	0.107	0.097	0.095	0.085	0.089	0.091	0.084
Max. 1-Hr. Concentration	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.172	0.090	0.102	0.146	0.079
Max. Annual Average	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.017	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017	0.016

Table 4-66

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Chapter 5

Toxic Air Contaminant Emissions, Air Quality, and Health Risk

Introduction

This chapter presents a summary of the emissions and air quality data available for selected toxic air contaminants, or TACs. The Health and Safety Code defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. There are almost 200 compounds that have been designated as TACs in California. Some of these TACs are groups of compounds which contain many individual substances (e.g., copper compounds, polycyclic aromatic compounds). The summary information includes available data for the ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data. These TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Besides the ten selected TACs, dioxins are also considered to pose substantial health risk, and a brief discussion on dioxins is presented in this introduction.

Chapter 5 is organized in three major sections. The introduction provides an overview of emission and air quality information on TACs. The second section provides summaries of statewide emissions, annual average concentrations (calculated as an average of the monthly means), and estimated health risks for the ten selected TACs. The third section provides similar information for California's five most populous air basins: the South Coast, the San Francisco Bay Area, the San Joaquin Valley, the San Diego, and the Sacramento Valley air basins. Tables of concentration and health risk data for the ten TACs at the state, air basin, and site levels are presented in Appendix C.

It is important to note that the summarized data reflect a spatial average, and ambient concentrations and health risks for individual locations may be higher or lower. In addition, the information presented here reflect the ten TACs that pose the most substantial health risk, based on data collected only at sites operated by the ARB. There may be other TACs that pose a substantial risk, but for which sufficient data are not available, or which have not been identified as a concern. Additional information on interpreting air quality data for TACs can be found in Chapter 1.

Sources of Toxic Air Contaminant Emissions in California. Similar to the criteria pollutants, TACs are emitted from stationary sources, area-wide sources, and mobile sources. The stationary source emissions inventory was developed by the ARB in cooperation with affected industries and the air pollution control and air quality management districts (districts) as part of AB 2588, the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Program). The ARB developed the emission estimates for area-wide sources and mobile sources.

Emissions of the selected TACs are reported on a statewide basis and for the ten highest-emitting counties in California. Emissions are also included for the five most populous air basins. In general, the inventory base year is 2006. Note, however, that the stationary source emissions inventory uses the best available information for the emission source, although the data may not have been specifically collected for 2006.

Air Quality Monitoring for Toxic Air Contaminants. The ARB maintains a statewide air quality monitoring network for TACs. The network was originally designed to measure selected substances in the ambient air to determine if levels were sufficiently high to be of concern. As a result of this monitoring, the ARB has determined atmospheric concentrations for over 60 individual substances. As shown in Figure 5-1, the ARB currently maintains a network of 17 air quality monitoring stations, measuring ambient concentrations of 64 substances.

TAC samples are generally collected once every 12 days, throughout the year. This results in 20,000 to 35,000 individual TAC measurements annually. The TAC data are typically sampled, analyzed, and reported as 24-hour averages. These 24-hour averages provide the basis for the annual average concentrations. The annual average concentrations are then used to support statewide risk assessment.

The TAC air quality trends included in this chapter are based on ambient data collected during 1990 through 2005 except for diesel PM which currently has no widely accepted monitoring method. The ARB has made some estimates of ambient diesel PM concentrations in 1998 based on receptor modeling techniques. These estimates are currently being reviewed to reflect control measures that are outlined in the Diesel Reduction Plan.

To minimize the influences of extreme weather on the trends, three-year statewide average concentrations were used to assess changes in individual TACs over time. The trend is determined by comparing the resulting averages from the beginning and end of the monitoring periods. For about half of the ten TACs, the baseline average concentration is for 1990-1992, and the current average concentration is for 2003-2005. However, acetaldehyde and formaldehyde data collected prior to 1996 are underestimated, so their respective baseline average concentration is for 1996-1998. For hexavalent chromium and *para*-dichlorobenzene, monitoring data were available starting in 1992 and 1991, respectively, so their baseline averages are for 1992-1994 and 1991-1993. Carbon tetrachloride data from February 2004 though 2005 are not available because of a problem with the laboratory standard. Therefore, carbon tetrachloride's baseline average is for 1990-1991 (1992 average was invalid), and the current average concentration is for 2001-2003.

Statewide Health Risk and Community Health. In the Almanac, health risk is presented on a pollutant-by-pollutant basis as well as on a cumulative basis with a focus on cancer risk. The risk for an individual TAC is calculated by multiplying its unit risk factor with its annual average concentration. The unit risk factor is expressed as the probability, or risk, of contracting cancer as a result of constant exposure to an ambient concentration of one microgram per cubic meter for 70 years. It reflects only the inhalation pathway. The risk is expressed as the risk of contracting cancer (or excess cancer cases)

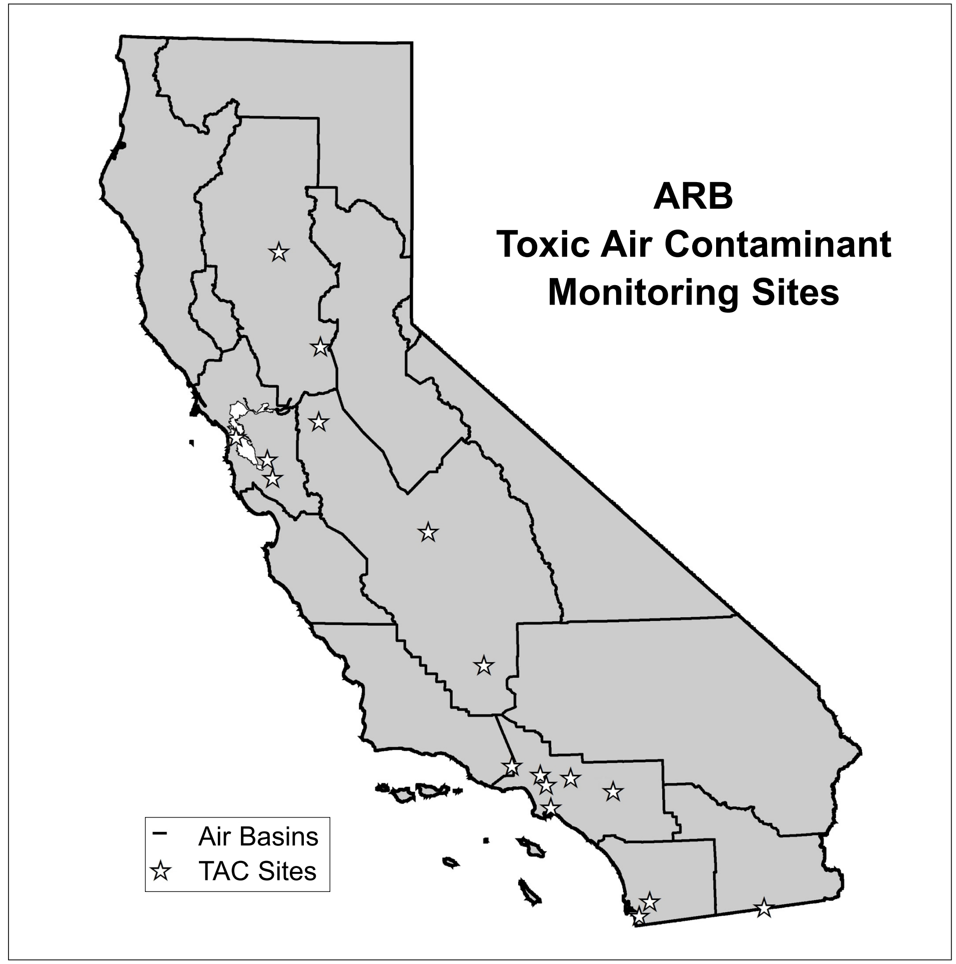


Figure 5-1

per million people exposed over a 70-year period. Table 5-1 lists the unit risk factor and limit of detection (LOD) for each of the ten TACs presented in this almanac. The LOD is the lowest concentration of a substance that can be reliably measured, and measurements below the LOD are assumed to be one-half of the LOD.

The TAC monitoring network is designed to provide air quality data in support of general population exposures. Therefore, the data do not provide information on localized impacts, often referred to as near-source or neighborhood exposures. Localized impacts may involve exposure to different TACs with higher or lower concentrations than those represented by the ambient air monitoring data.

The ARB participated in several studies to address localized impacts and community health issues. For example, during October 1999, ARB initiated a monitoring and evaluation study in the Barrio Logan and Logan Heights neighborhoods of San Diego. In addition, ARB has conducted monitoring in five other communities in support of the community health program as required by the Children's Environmental Health Protection Program (SB 25). Efforts such as these will supplement our existing statewide TAC monitoring network, which was designed for regional rather than neighborhood assessments. Information on these and other studies is available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

Monitoring for Dioxins. Dioxins and furans, collectively referred to as dioxins, are a group of chemicals with similar structures and chemical properties. When found in the environment, dioxins are usually a mixture of these chemicals. Dioxins are byproducts of various industrial and combustion activities, and they can be emitted from vehicles, waste incineration, chemical manufacturing plants, and forest fires. Once released into the environment, dioxins are highly persistent and can accumulate in the tissues of animals and humans.

Dioxins enter the body through direct inhalation or can accumulate in the body from eating dioxins-contaminated vegetation or animals that have eaten such vegetation. Many studies have shown that dioxins can cause cancer and other health problems including birth defects and liver damage.

The ARB has identified dioxins as a TAC, and the U.S. EPA has listed them as hazardous air pollutants. In 1990, the ARB adopted a control measure to reduce emissions of dioxins from medical waste incinerators by 99 percent. At the time, medical waste incinerators were one of the largest known air sources of dioxins in California. As a result of the control measure, the number of medical incinerators in the State dropped sharply, from about 150 to less than 10.

Toxic Air Contaminant Unit Risk Factors

Toxic Air Contaminant	Unit Risk/Million People[1]	Detection Limit (ppb)
Acetaldehyde	2.7	0.10
Benzene	29	0.05
1,3-Butadiene	170	0.04
Carbon Tetrachloride	42	0.02
Chromium, Hexavalent	150,000	0.06[2]
para-Dichlorobenzene	11	0.30
Formaldehyde	6	0.10
Methylene Chloride	1	0.10
Perchloroethylene	5.9	0.01
Diesel Particulate Matter	300[3]	N/A

1 The unit risk represents the number of excess cancer cases per million people per microgram per cubic meter TAC concentration over a 70-year, lifetime exposure.
2 The hexavalent chromium detection limit units are in nanograms per cubic meter.
3 A diesel particulate matter unit risk value of 300 is used as a reasonable estimate in the *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles"* (ARB, October 2000).

Table 5-1

In order to provide information on ambient levels of dioxins and dioxin-like compounds, the ARB has developed the California Ambient Dioxin Air Monitoring Program (CADAMP). This program is modeled, in part, after the U.S. EPA's National Dioxin Air Monitoring Network (NDAMN) to ensure the data from the two networks can be used interchangeably. The two networks use the same sampling and analytical techniques; however, CADAMP focuses on dioxins sampling in urban areas while NDAMN emphasizes rural areas nationwide. Ten sampling sites were deployed in CADAMP, five in the San Francisco Bay Area, four in the South Coast Air Basin, and one in Sacramento. Several of the CADAMP sites are also part of the ARB's Children's Environmental Health Protection Program (SB 25). The monitoring period was from December 2001 to August 2006. The dioxin monitoring data can be found at *www.arb.ca.gov/pub/dioxin/cadamp.php*. General information on ARB's dioxins program is available at *www.arb.ca.gov/toxics/dioxins/dioxins.htm*.

Statewide TAC Emissions and Ambient Health Risks. Table 5-2 provides a summary of the Statewide emissions for the top 10 toxics. Figure 5-2 provides a graphical presentation of the Statewide ambient health risks for 2005. Data for Diesel PM reflect 2000 and carbon tetrachloride reflect 2003.

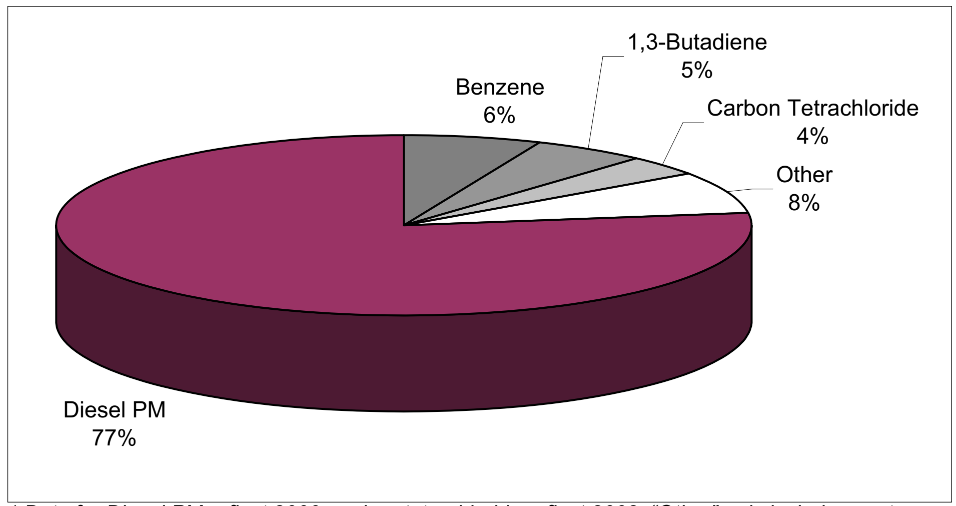
Additional Information. Additional emissions and air quality data for the ten TACs in this almanac, as well as many other TACs, may be found by accessing the ARB website at *www.arb.ca.gov/html/aqe&m.htm.* The web data are updated periodically, as new information becomes available. More detailed information on the health effects of these compounds, as well as other TACs, can be found in an ARB report entitled: *"Update to the Toxic Air Contaminant List"* dated December 1999. This report can be obtained by accessing the ARB website at *www.arb.ca.gov/toxics/id/id.htm*.

2006 Statewide TAC Emissions

TAC	tons/year
Acetaldehyde	10,023
Benzene	12,060
1,3-Butadiene	3,589
Carbon Tetrachloride	2
Chromium, Hexavalent	1
para-Dichlorobenzene	1,469
Formaldehyde	23,154
Methylene Chloride	6,527
Perchloroethylene	4,865
Diesel PM	42,326

Table 5-2

2005 Statewide Health Risks[1]



[1] Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; "Other" only includes acetaldehyde, formaldehyde, para-dichlorobenzene, hexavalent chromium, perchloroethylene, and methylene chloride.

Figure 5-2

Acetaldehyde

2006 Statewide Emission Inventory

Acetaldehyde is a federal hazardous air pollutant (HAP). The ARB identified acetaldehyde as a TAC in April 1993 under AB 2728. This bill required the ARB to identify all federal HAPs as TACs. In California, acetaldehyde is identified as a carcinogen. This compound also causes chronic non-cancer toxicity in the respiratory system.

Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. In California, photochemical oxidation is the largest source of acetaldehyde concentrations in the ambient air. Approximately 32 percent of the statewide acetaldehyde emissions can be attributed to on-road motor vehicles, with an additional 50 percent attributed to other mobile sources such as construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area-wide sources of emissions, which contribute 16 percent of the statewide acetaldehyde emissions, include the burning of wood in residential fireplaces and wood stoves. Stationary sources contribute two percent of the statewide acetaldehyde emissions. The primary stationary sources are from fuel combustion from the petroleum industry.

Acetaldehyde		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	163	2%
Area-wide Sources	1653	16%
On-Road Mobile	3159	32%
Gasoline Vehicles	919	9%
Diesel Vehicles	2240	22%
Other Mobile	5049	50%
Gasoline Fuel	911	9%
Diesel Fuel	3534	35%
Other Fuel	604	6%
Natural Sources	0	0%
Total Statewide	***10023***	***100%***

Table 5-3

2006 Top Ten Counties - Acetaldehyde

The top ten counties account for approximately 47 percent of the statewide acetaldehyde emissions. The South Coast Air Basin has three of the top ten counties: South Coast portion of Los Angeles County (13 percent of the emissions of acetaldehyde statewide), Orange County (four percent), and South Coast portion of San Bernardino County (three percent). Collectively, approximately 23 percent of statewide acetaldehyde emissions occur in the South Coast Air Basin. San Diego County accounts for approximately six percent. The six other counties in the top ten for acetaldehyde emissions are: Kern (San Joaquin Valley portion), San Bernardino (Mojave Desert portion), Alameda, Fresno, Santa Clara, and San Joaquin. These six counties account for approximately 17 percent of statewide acetaldehyde emissions.

Acetaldehyde			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	1343	13%
San Diego	San Diego	589	6%
Orange	South Coast	420	4%
Kern	San Joaquin Valley	393	4%
San Bernardino	Mojave Desert	387	4%
Alameda	San Francisco Bay Area	381	4%
Fresno	San Joaquin Valley	351	3%
Santa Clara	San Francisco Bay Area	298	3%
San Bernardino	South Coast	290	3%
San Joaquin	San Joaquin Valley	286	3%

Table 5-4

Acetaldehyde

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of acetaldehyde in its statewide air toxics monitoring network. Figure 5-3 presents a trend graph of acetaldehyde for the years 1990 through 2005. The graph shows a general decrease in acetaldehyde levels from 1990-1997 with some year-to-year fluctuations. There was a sharp drop in acetaldehyde levels during 1995 and a corresponding increase the following year. Levels between 1997 and 2005 have shown little variation.

Although concentration and health risk data are available from 1990 to 2005, the data prior to 1996 are lower than expected because the ARB collected ambient samples using a method that underestimated the actual concentrations. A method change in 1996 corrected this bias; however, the ARB was unable to develop a correction factor for the earlier data. The data prior to 1996 are included here because it is certain that at least the reported amount was present. However, the data prior to 1996 are not directly comparable to data collected during the later years.

The acetaldehyde trend is based on monitoring data. To minimize the influences of weather on the trend, three-year average statewide concentrations are used to assess the change over time. To do this, the resulting averages at the beginning and the end of the monitoring period were compared. Although acetaldehyde data were collected beginning in 1990, as noted above, data prior to 1996 were unreliable. Therefore, the period 1996-1998 was used as the baseline average for comparison to 2003-2005. The result shows a one percent increase in acetaldehyde concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2005, there were an estimated six excess cancer cases per million people due to acetaldehyde. On an individual basis, the health risks from acetaldehyde are much lower than they are for some of the other TACs. Among the ten compounds presented in this almanac, the health risk from acetaldehyde ranks eighth.

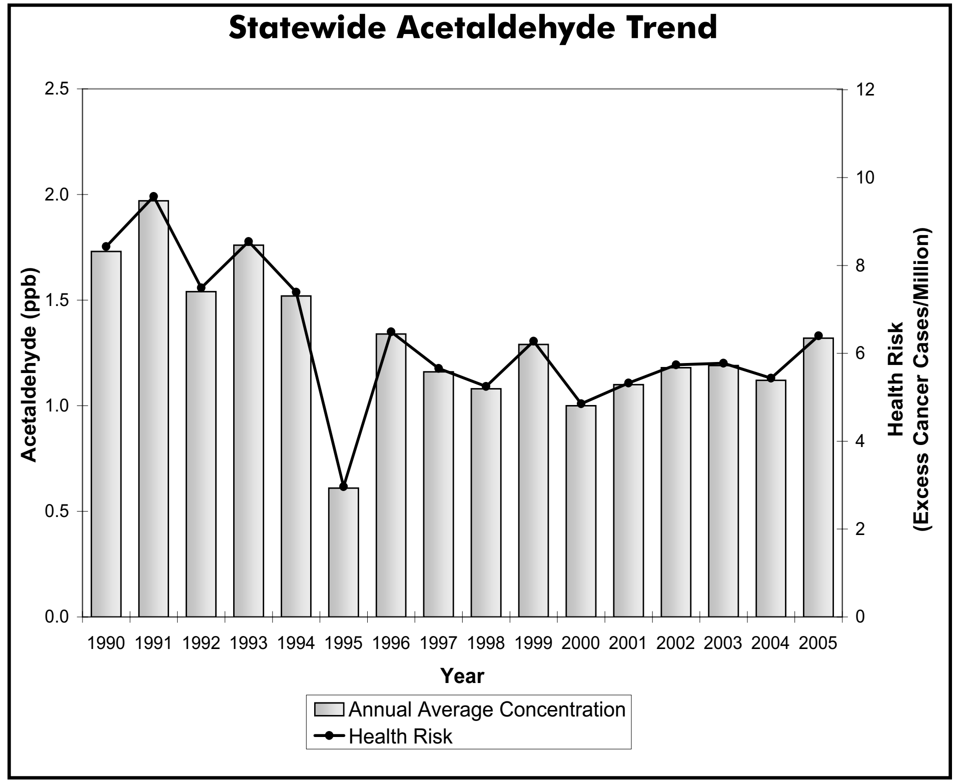


Figure 5-3

It is important to note that the health risk due to acetaldehyde is not spread evenly throughout the State. This is common for almost all pollutants. The data reflect statewide averages, and do not consider local impacts. Therefore, some Californians may be exposed to near-source, or "hot spot" concentrations of acetaldehyde which are above the statewide annual average concentration. "Hot spot" exposure may increase the potential cancer risk to individuals living near large combustion sources. Information collected under AB 2588 (the Hot Spots Program) will be used to help determine the priority and need for control of sources of acetaldehyde.

Another factor to consider is that the statewide averages reflect ambient outdoor concentrations. In general, acetaldehyde concentrations are higher indoors than outdoors, due in part to the abundance of combustion sources, such as cigarettes, fireplaces, and woodstoves.

Acetaldehyde is directly emitted from combustion sources and also occurs in the environment as a result of the photochemical oxidation of ROG. Over the years, stringent emission standards for new vehicles have resulted in steady declines in directly emitted acetaldehyde due to vehicular emissions. However, its secondary formation can be hard to quantify, and can contribute to fluctuations in ambient levels of acetaldehyde.

Benzene

2006 Statewide Emission Inventory

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985 under California's TAC program (AB 1807). In addition to being a carcinogen, benzene also has non-cancer health impacts. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Current estimates show that approximately 88 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. The predominant sources of total benzene emissions in the atmosphere are gasoline fugitive emissions and gasoline motor vehicle exhaust. Approximately 50 percent of the statewide benzene emissions can be attributed to on-road motor vehicles, with an additional 38 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and lawn and garden equipment. Currently, the benzene content of gasoline is less than one percent. Some of the benzene in the fuel is emitted from vehicles as unburned fuel. Benzene is also formed as a partial combustion product of larger aromatic fuel components. Industry-related stationary sources contribute ten percent and area-wide sources contribute one percent of the statewide benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation. The primary area-wide sources include residential combustion of various types such as cooking and water heating. The primary natural sources are petroleum seeps that form where oil or natural gas emerge from subsurface sources to the ground or water surface.

Benzene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1231	10%
Area-wide Sources	122	1%
On-Road Mobile	6036	50%
Gasoline Vehicles	5426	45%
Diesel Vehicles	609	5%
Other Mobile	4625	38%
Gasoline Fuel	3360	28%
Diesel Fuel	962	8%
Other Fuel	304	3%
Natural Sources	46	0%
Total Statewide	***12060***	***100%***

Table 5-5

2006 Top Ten Counties - Benzene

The top ten counties account for approximately 51 percent of the statewide benzene emissions. The South Coast Air Basin has four of the top ten counties emitting benzene, representing 30 percent of statewide benzene emissions. San Diego contributes seven percent. Two counties in the San Francisco Air Basin contribute approximately seven percent: Santa Clara County (three percent) and Alameda County (three percent). The three other counties in the top ten for benzene emissions are: Kern (San Joaquin portion), San Bernardino (Mojave Desert portion), and Sacramento. These counties account for approximately 12 percent of statewide benzene emissions.

Benzene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	2143	18%
San Diego	San Diego	869	7%
Orange	South Coast	683	6%
Kern	San Joaquin Valley	655	5%
San Bernardino	Mojave Desert	425	4%
San Bernardino	South Coast	400	3%
Santa Clara	San Francisco Bay Area	395	3%
Alameda	San Francisco Bay Area	389	3%
Riverside	South Coast	353	3%
Sacramento	Sacramento Valley	325	3%

Table 5-6

Benzene

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of benzene in its statewide air toxics monitoring network. Figure 5-4 shows the annual average statewide benzene concentrations and the associated health risk from benzene alone. Ambient levels have shown generally steady improvement since 1990. To examine the trend in benzene while minimizing the influences of weather on the trend, the statewide average benzene concentration for 1990-1992 was compared to that for 2003-2005. The result is a 77 percent decrease in both concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration level over a 70-year lifetime. From these data, it is apparent that benzene poses a substantial health risk. Based on the statewide averages, benzene ranks second highest among the ten TACs presented in this almanac. During 2005, there was an estimated risk of 44 excess cancer cases per million people due to benzene. However, as with all air pollutants, the health risk is not spread evenly throughout the State. In some areas, the health risk is higher than the statewide average, while in other areas the health risk is lower. In general, ambient benzene concentrations and associated health risks tend to be higher in the more urbanized areas.

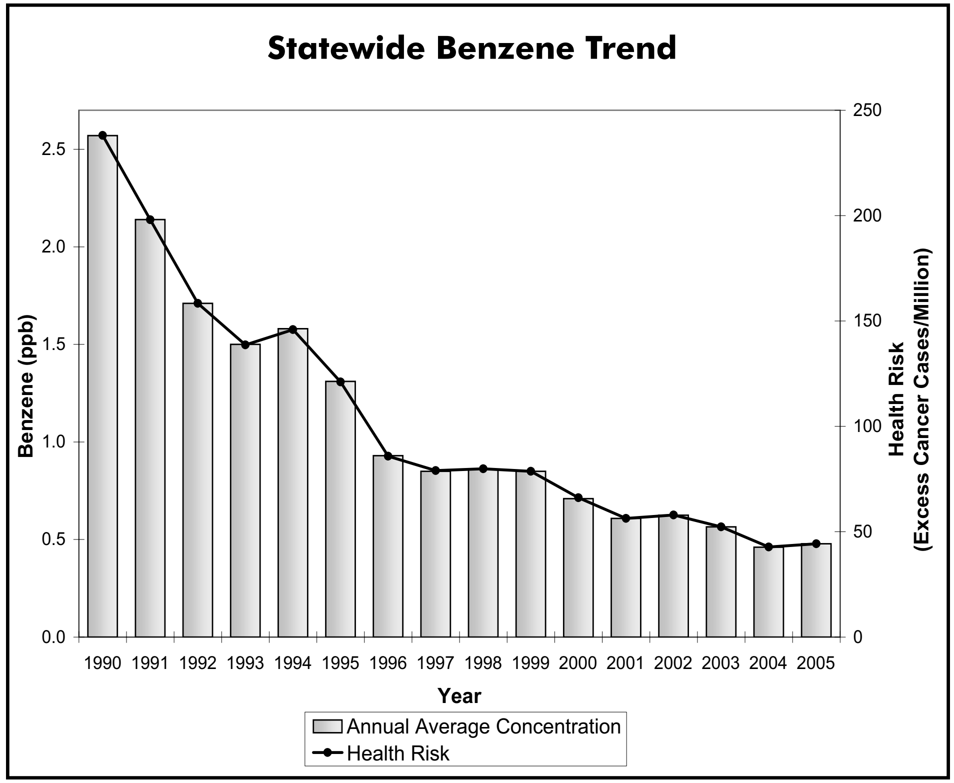


Figure 5-4

It is important to note that the ambient benzene concentrations have been corrected to provide a consistent long-term data record. Prior to 1999, the ARB analyzed samples using a single-point calibration of the gas chromatograph analyzers. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient benzene, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year long study showed that the two measurement methods were highly correlated, and the ARB was able to develop a predictive relationship between the two. To avoid discontinuity in the trend data, the pre-1999 benzene data shown in Figure 5-4 have been adjusted according to these predictive equations, and they now reflect the results that would have been produced using the 3-point calibration method. Information about the specific study process and adjustment equations can be found on the "Laboratory Standard Operating Procedures for Ambient Air" page on the ARB website at *www.arb.ca.gov/aaqm/sop/summary/summary.htm.*

The ARB started to use a gas chromatography/mass spectrometry (GC/MS) based method to analyze benzene in 2001 to fulfill a lower detection limit requirement for the SB25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally. Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

Although the health risk from benzene is still substantial, emissions have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures and control technologies. The LEV regulations have resulted in a significant reduction in exhaust and evaporative hydrocarbon emissions, including benzene. As the fleet turns over and new LEV technology vehicles are introduced into the fleet, emission reductions will continue. In 1996, the California Phase II Reformulated Gasoline Program was implemented statewide. Fuel reformulation has led to a substantial decrease in the level of benzene from gasoline and vehicle exhaust emissions. Since motor vehicles continue to be the major source of benzene in the State, future efforts to improve fuel formulations, reduce vehicle exhaust emissions, and promote less polluting modes of transportation will likely continue to help reduce benzene emissions.

1,3-Butadiene

2006 Statewide Emission Inventory

The ARB identified 1,3-butadiene as a TAC in 1992. In California, 1,3-butadiene has been identified as a carcinogen. In addition, 1,3-butadiene vapors are mildly irritating to the eyes and mucous membranes and cause neurological effects at very high levels.

Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for approximately 64 percent of the total statewide emissions. Vehicles that are not equipped with functioning exhaust catalysts emit greater amounts of 1,3-butadiene than vehicles with functioning catalysts. Approximately 34 percent of the statewide 1,3-butadiene emissions can be attributed to on-road motor vehicles, with an additional 30 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and aircraft. Area-wide sources such as agricultural waste burning and open burning associated with forest management contribute approximately ten percent. Stationary sources contribute less than one percent of the statewide 1,3-butadiene emissions. The primary stationary sources with reported 1,3-butadiene emissions include petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources of 1,3-butadiene emissions are wildfires.

1,3-Butadiene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	15	0%
Area-wide Sources	358	10%
On-Road Mobile	1209	34%
Gasoline Vehicles	1151	32%
Diesel Vehicles	58	2%
Other Mobile	1070	30%
Gasoline Fuel	774	22%
Diesel Fuel	91	3%
Other Fuel	205	6%
Natural Sources	937	26%
Total Statewide	***3589***	***100%***

Table 5-7

2006 Top Ten Counties - 1,3-Butadiene Emissions

The top ten counties account for approximately 44 percent of the statewide 1,3-butadiene emissions. Emission sources in the South Coast Air Basin contribute approximately 19 percent of the statewide total: Los Angeles County (12 percent), Orange County (four percent), and South Coast portion of San Bernardino County (three percent). San Diego County accounts for approximately seven percent. Two counties in the San Joaquin Valley Air Basin contribute seven percent of the 1,3-butadiene: Tulare County (four percent) and Fresno County (three percent). The other counties in the top ten account for 11 percent: San Bernardino (Mojave Desert portion), Tuolumne, Siskiyou and Trinity.

1,3-Butadiene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	437	12%
San Diego	San Diego	241	7%
Tulare	San Joaquin Valley	156	4%
Orange	South Coast	135	4%
San Bernardino	South Coast	110	3%
San Bernardino	Mojave Desert	109	3%
Fresno	San Joaquin Valley	108	3%
Tuolumne	Mountain Counties	99	3%
Siskiyou	Northeast Plateau	98	3%
Trinity	North Coast	87	2%

Table 5-8

1,3-Butadiene

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of 1,3-butadiene in its statewide air toxics monitoring network. Figure 5-5 shows the annual average statewide 1,3-butadiene concentrations and the associated health risk from this TAC alone since 1990. The data show a general downward trend, with some variability. To examine the trend in 1,3-butadiene while minimizing the influences of weather, the statewide average 1,3-butadiene concentration for 1990-1992 was compared to that for 2003-2005. The result is a 70 percent decrease in both concentration and health risk. Despite this substantial drop, the health risk from this compound remains relatively high. In 2005, there was an estimated risk of 38 excess cancer cases per million people. Of the ten compounds presented in this almanac, the average statewide health risk from 1,3-butadiene ranks third. Again, it is important to note that the data shown here reflect statewide averages. They do not consider local impacts, which may be higher or lower.

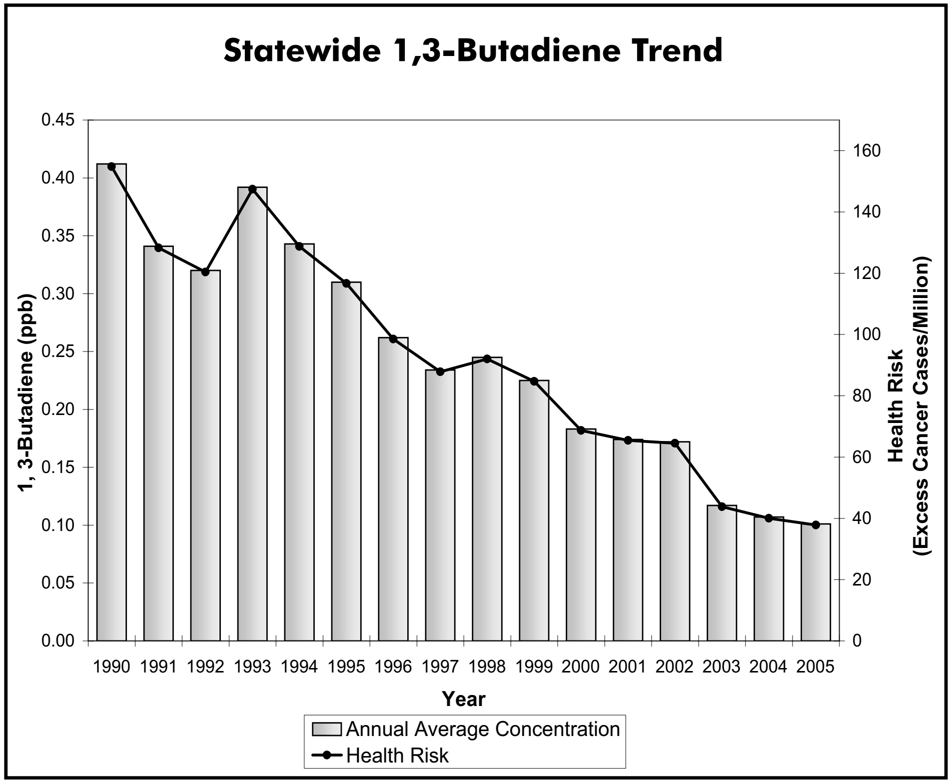


Figure 5-5

Similar to benzene, the ARB analyzed 1,3-butadiene samples using a single-point calibration of the gas chromatograph analyzers prior to 1999. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient 1,3-butadiene, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year-long ARB study showed that the two measurement methods were highly correlated, and the ARB was able to develop a predictive relationship between them. To avoid discontinuity in the trend data, the pre-1999 1,3-butadiene data shown in Figure 5-5 have been adjusted according to these predictive equations and now reflect the results that would have been produced using the 3-point calibration method. Information about the specific study process and adjustment equations can be found on the "Laboratory Standard Operating Procedures for Ambient Air" page on the ARB website at *www.arb.ca.gov/aaqm/sop/summary/summary.htm*.

Similar to benzene, the ARB started to use a GC/MS based method to analyze 1,3-butadiene in 2001. This change in method fulfilled a lower detection limit requirement for the SB 25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally.

Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

In California, the majority of 1,3-butadiene emissions are from incomplete combustion of gasoline and diesel fuels. The ARB adopted LEV/Clean Fuels regulations in 1990 and the Phase II reformulated gasoline regulations were implemented in 1996. The LEV regulations are expected to continue to reduce 1,3-butadiene emissions from cars and light-duty trucks as the fleet turns over and new LEVs are introduced into the fleet.

Carbon Tetrachloride

2006 Statewide Emission Inventory

The ARB identified carbon tetrachloride as a TAC in 1987 under California's TAC program (AB 1807). In California, carbon tetrachloride has been identified as a carcinogen. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant.

The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.96 tons per year), and background concentrations account for most of the health risk.

Carbon Tetrachloride		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1.96	100%
Area-wide Sources	0	0%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***1.96***	***100%***

Table 5-9

2006 Top Ten Counties - Carbon Tetrachloride

The top two counties account for 75 percent of the statewide carbon tetrachloride emissions. Contra Costa County (San Francisco Bay Area Air Basin) accounts for approximately 47 percent, and Orange County accounts for approximately 28 percent of the emissions of carbon tetrachloride statewide. Although the percentages for these counties are high, the emissions are very small (one ton or less per year in each county). The eight other counties in the top ten contribute approximately 25 percent of statewide carbon tetrachloride emissions.

Carbon Tetrachloride			
County	**Air Basin**	**tons/year**	**Percent**
Contra Costa	San Francisco Bay Area	1	47%
Orange	South Coast	1	28%
San Diego	San Diego	<1	5%
Riverside	South Coast	<1	4%
Los Angeles	South Coast	<1	4%
San Bernardino	South Coast	<1	3%
Ventura	South Central Coast	<1	3%
Sacramento	Sacramento Valley	<1	3%
San Bernardino	Mojave Desert	<1	2%
Kern	Mojave Desert	<1	1%

Table 5-10

Carbon Tetrachloride

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of carbon tetrachloride in its statewide air toxics monitoring network. Figure 5-6 shows the annual average statewide concentrations and the associated health risk from carbon tetrachloride alone. As with a number of other TACs, there are several years of incomplete data for carbon tetrachloride. The annual average concentration is available only if there is a full year of data. Based on the available data, the ambient concentrations and health risk dropped between 1990 and 1996, and then there was a substantial increase in values for 1998, followed by levels which stayed fairly constant between 2000 and 2003. Carbon tetrachloride data from February 2004 through 2005 are not available because of a problem with the laboratory standard.

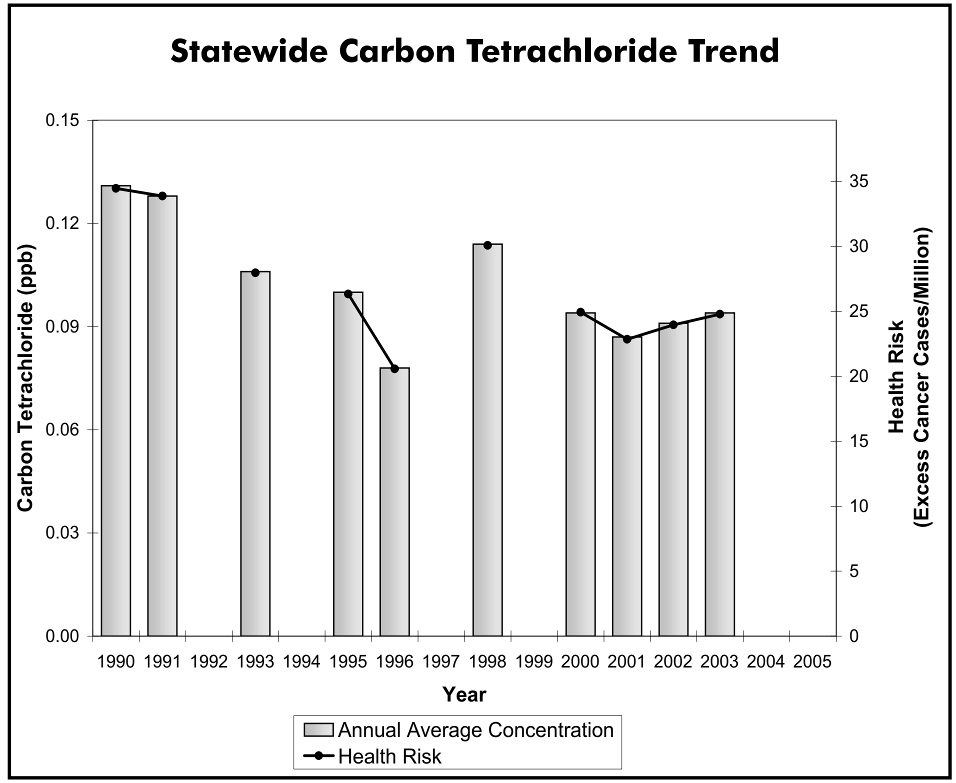


Figure 5-6

To examine the trend in carbon tetrachloride while minimizing the influences of weather on the trend, the statewide average carbon tetrachloride concentration for 1990-1991 (1992 average was invalid) was compared to that for 2001-2003. The result is a 30 percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. In 2003, there was an estimated risk of 25 excess cancer cases per million people. The health risk of this TAC ranks fourth among the ten compounds presented in this almanac. As with all air pollutants, the health risk is not spread evenly throughout the State. In some areas, the health risk is higher than the statewide average, while in other areas the health risk is lower.

Unlike many of the other TACs, carbon tetrachloride is emitted primarily by sources other than motor vehicles, and there are virtually no emissions within California. However, because carbon tetrachloride persists in the atmosphere for many years (the estimated atmospheric lifetime is 50 years), background concentrations still pose a health risk.

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Chromium, Hexavalent

2006 Statewide Emission Inventory

Hexavalent chromium was identified as a TAC in 1986 under California's TAC program (AB 1807, Tanner, 1983). In California, hexavalent chromium has been identified as a carcinogen. There is epidemiological evidence that exposure to inhaled hexavalent chromium may result in lung cancer. The principal acute effects of hexavalent chromium are renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Chrome plating is no longer the primary source of hexavalent chromium emissions in the State. Hexavalent chromium emissions from plating have declined significantly from previous editions of the almanac due to many platers switching to the use of trivalent chromium in place of hexavalent chromium. Chromic acid anodizing is another industrial metal finishing process which uses hexavalent chromium. A third source of hexavalent chromium emissions is the firebrick lining of glass furnaces. In California, stationary sources are estimated to emit about 0.22 ton per year of hexavalent chromium. Emissions from these sources were obtained from facilities under the Air Toxics Hot Spots Act of 1987. This act required facilities to estimate toxics emissions, including hexavalent chromium. Approximately 0.15 tons of hexavalent chromium are emitted by gasoline motor vehicles. Other mobile sources such as trains and ships contribute approximately 0.77 tons of hexavalent chromium annually.

Chromium, Hexavalent		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	0.22	19%
Area-wide Sources	0.01	1%
On-Road Mobile	0.16	14%
Gasoline Vehicles	0.15	13%
Diesel Vehicles	< .01	1%
Other Mobile	0.77	67%
Gasoline Fuel	< .01	0%
Diesel Fuel	< .01	0%
Other Fuel	0.77	67%
Natural Sources	0	0%
Total Statewide	***1.16***	***100%***

Table 5-11

2006 Top Ten Counties - Chromium, Hexavalent

Four counties account for approximately 61 percent of the statewide hexavalent chromium emissions: Mojave Desert portion of Kern County (25 percent), San Diego County (20 percent), Kings (11 percent), and South Coast portion of Los Angeles (six percent). The six other counties in the top ten for hexavalent chromium emissions are: Imperial, Fresno, Los Angeles (Mojave Desert portion), Ventura, Kern (San Joaquin Valley portion), and Solano (San Francisco Bay Area portion). These six counties account for approximately 17 percent of statewide hexavalent chromium emissions.

Chromium, Hexavalent			
County	Air Basin	tons/year	Percent
Kern	Mojave Desert	0.29	25%
San Diego	San Diego	0.23	20%
Kings	San Joaquin Valley	0.12	11%
Los Angeles	South Coast	0.07	6%
Imperial	Salton Sea	0.06	5%
Fresno	San Joaquin Valley	0.04	4%
Los Angeles	Mojave Desert	0.03	3%
Ventura	South Central Coast	0.03	2%
Kern	San Joaquin Valley	0.02	2%
Solano	San Francisco Bay Area	0.02	2%

Table 5-12

Chromium, Hexavalent

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of hexavalent chromium in its statewide air toxics monitoring network. Chromium exists primarily in hexavalent and trivalent forms. Hexavalent chromium has been identified as a TAC and has been found to be much more reactive and much more toxic than trivalent chromium.

Fuel combustion from mobile sources is the largest source of hexavalent chromium emissions. Combustion from stationary sources is also a large source of emissions. Examples of other sources of hexavalent chromium emissions include chrome plating, chromic acid anodizing, and thermal spraying. In the past, compounds containing hexavalent chromium, such as sodium dichromate or lead chromate, were added to cooling tower water to control corrosion in the towers and associated heat exchangers. Hexavalent chromium was also used in motor vehicle and mobile equipment coatings.

ARB has adopted several control measures to reduce emissions or prohibit use of this very potent TAC. In 1988 ARB adopted the Chrome Plating Airborne Toxics Control Measure (ATCM). This ATCM reduced hexavalent chromium emissions from chrome plating and chromic acid anodizing operations by well over 90 percent, with the largest facilities reducing emissions by over 99 percent. This ATCM was amended in 2006 to further reduce emissions from all chrome plating and anodizing operations. In 1989, ARB adopted a measure that prohibited the use of hexavalent chromium compounds in cooling towers. ARB has also adopted a measure to prohibit use of hexavalent chromium in motor vehicle and mobile equipment coatings, and a measure that substantially reduces hexavalent chromium emissions from thermal spraying operations.

Statewide annual averages and health risk estimates for hexavalent chromium are available for 1992 through 2005. Prior to 1992, a different measurement method was used. With this method, some of the hexavalent chromium was transformed into trivalent chromium on the collection filter. As a result, the hexavalent chromium concentrations were unreliable, and these data are not included in this almanac. Since 1992, the method to analyze hexavalent chromium has been improved to prevent the transformation from occurring.

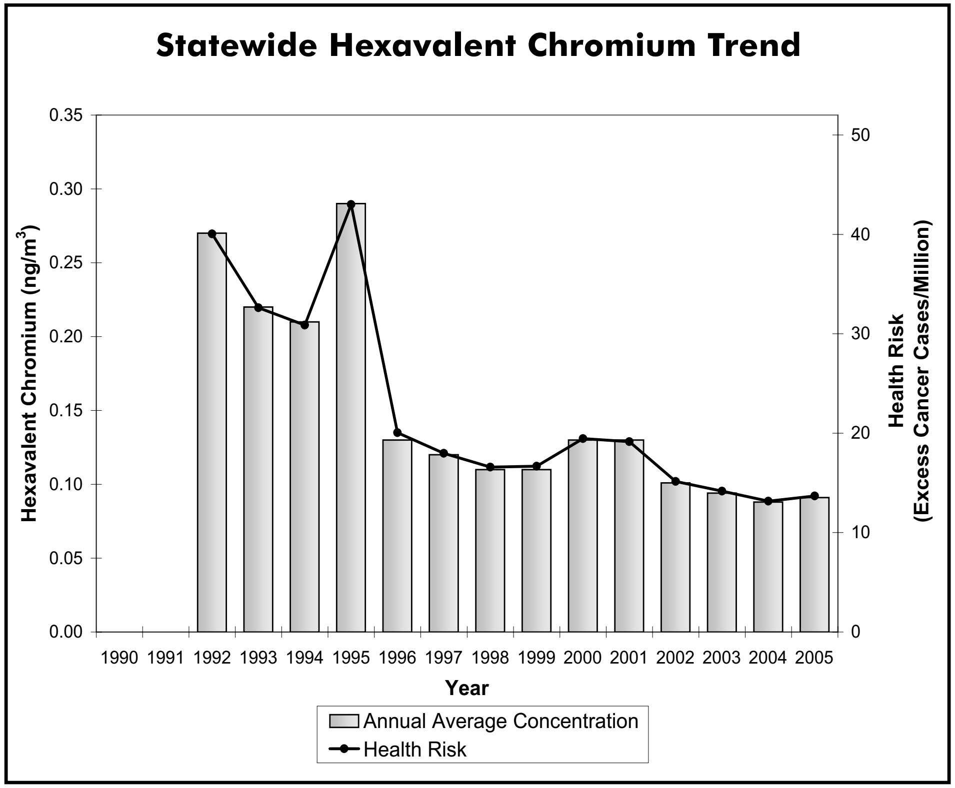

Figure 5-7

The statewide annual average concentrations and associated health risks are shown in Figure 5-7. Both show a general downward trend, with the exception of 1995. The high 1995 value is driven in part by an extremely high annual average for the Burbank site in the South Coast Air Basin. However, a number of other sites also had higher concentrations in 1995 than in other years. Between 1996 and 2005, values show significant improvement, except for slight elevated values in 2000 and 2001.

The significant reduction in hexavalent chromium coincided with the complete implementation of the chrome plating and the chromate-treated cooling tower control measures. The measures were so effective that they resulted in a very high percentage of the measured values being below the LOD. From 1998 through 2001, the lowest level that could reliably be measured was 0.2 nanograms per cubic meter (ng/m^3.). In calculating an annual average, values below 0.2 ng/m^3 are assumed equal to 0.1 ng/m^3, which is half the LOD. This approach applies to all other TACs when their measurements are below their respective LODs. Starting on January 1, 2002, hexavalent chromium is being analyzed by compositing quarterly samples by site. Although the new method decreases the number of samples, it increases the sensitivity of the instrument by lowering the lowest concentration that can be reliably measured from 0.2 ng/m^3 to 0.06 ng/m^3. Using the new method, measurements will sometimes fall below the LOD, and the half detection limit approach is applied to those measurements.

To examine the trend in hexavalent chromium while minimizing the influences of weather on the trend, the average hexavalent chromium concentration for 1992-1994 was compared to that for 2003-2005. The result is a 61 percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level. In 2005, there were an estimated 14 excess cancer cases per million people. Based on data for the ten TACs presented in this almanac, hexavalent chromium ranks sixth in terms of ambient health risk. It is important to note that since hexavalent chromium exposure and health impacts usually occur on a neighborhood scale, actual health risk can be higher in some areas than the statewide average, and lower in other areas.

para-Dichlorobenzene

2006 Statewide Emission Inventory

The ARB identified *para*-dichlorobenzene as a TAC in April 1993 under AB 2728. This bill required the ARB to identify, by regulation, all federal hazardous air pollutants as TACs. In California, *para*-dichlorobenzene has been identified as a carcinogen. In addition to the carcinogenic impact, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans.

The primary area-wide sources that have reported emissions of *para*-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide *para*-dichlorobenzene emissions.

para-Dichlorobenzene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	2	<1%
Area-wide Sources	1467	100%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***1469***	***100%***

Table 5-13

2006 Top Ten Counties - *para*-Dichlorobenzene

The top ten counties account for approximately 69 percent of the statewide *para*-dichlorobenzene emissions. The South Coast Air Basin has four of the top ten counties, representing 42 percent of statewide *para*-dichlorobenzene emissions. San Diego County contributes approximately eight percent. Three counties in the San Francisco Bay Area Air Basin contribute approximately 12 percent: Santa Clara County (five percent), Alameda County (four percent), and Contra Costa County (three percent). The other two counties in the top ten are: Sacramento (four percent) and Fresno (two percent).

para-Dichlorobenzene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	383	26%
San Diego	San Diego	122	8%
Orange	South Coast	121	8%
Santa Clara	San Francisco Bay Area	71	5%
Alameda	San Francisco Bay Area	61	4%
San Bernardino	South Coast	60	4%
Riverside	South Coast	59	4%
Sacramento	Sacramento Valley	55	4%
Contra Costa	San Francisco Bay Area	40	3%
Fresno	San Joaquin Valley	36	2%

Table 5-14

para-Dichlorobenzene

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of *para*-dichlorobenzene in its statewide air toxics monitoring network. Statewide annual average concentrations and health risk estimates are available for 1991 through 2005, with the exception of 1998 and 1999. No summary data are available for these years because of problems with laboratory equipment and associated data reliability. The trend graph for *para*-dichlorobenzene, shown in Figure 5-8, shows values fairly constant throughout 1991 to 1997, with slightly lower values in 1994 and 1996. Following a drop in 2000, there was an upturn in 2001 through 2002, and *para*-dichlorobenzene levels have shown very little variation between 2002 and 2005.

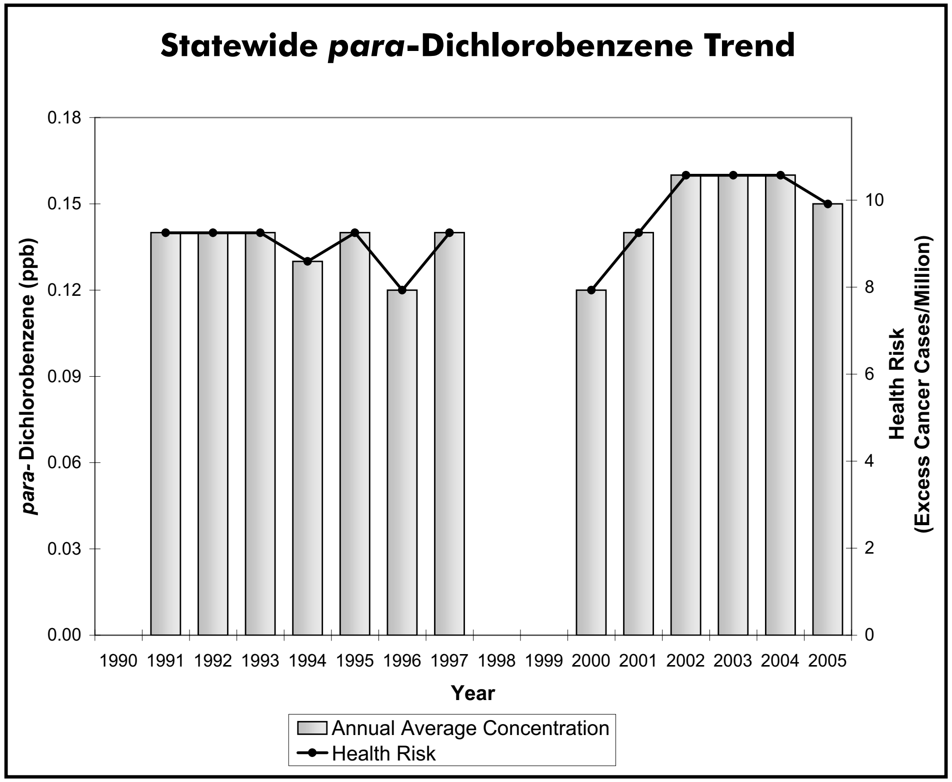

Figure 5-8

The increase in *para*-dichlorobenzene was likely to be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations. In 2001, the lowest level of *para*-dichlorobenzene that could be reliably measured was changed from 0.2 to 0.3 parts per billion (ppb). This change resulted in a higher percentage of *para*-dichlorobenzene samples not detectable because most samples were at less than 0.3 ppb.

In calculating an annual average, values below 0.3 ppb are assumed equal to 0.15 ppb, which is one-half of the LOD. This approach applies to all other TACs when their measurements are below the LOD. It is a good estimate for some TACs, however, it is uncertain for *para*-dichlorobenzene due to the large number of samples that were lower than the LOD. However, for consistency, this approach is applied to *para*-dichlorobenzene until a better method becomes available.

To examine the trend in *para*-dichlorobenzene, the statewide average concentration for 1991-1993 was compared to that for 2003-2005. The result is a 12 percent increase in both the concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2005, there was an estimated risk of 10 excess cancer cases per million people from this compound alone. Based on this, *para*-dichlorobenzene ranks seventh out of the ten compounds presented in this almanac. However, it is important to note that annual average concentration and health risk for *para*-dichlorobenzene are heavily influenced by its LOD.

The ARB adopted an ATCM in 2004 to prohibit the use of *para*-dichlorobenzene in solid air fresheners and toilet/urinal care products. The ATCM required the phase-out of *para*-dichlorobenzene from these products by December 31, 2005, with a complete ban on the sale of the products by December 31, 2006. An emission reduction of 2.72 tons per day of *para*-dichlorobenzene was expected. Besides reducing emissions and improving air quality inside buildings and the surrounding area, the ATCM is also expected to reduce *para*-dichlorobenzene emissions from water treatment facilities processing wastewater from toilets and urinals, and therefore reduce the ambient concentration of *para*-dichlorobenzene.

Formaldehyde

2006 Statewide Emission Inventory

The ARB identified formaldehyde as a TAC in 1992 under California's TAC program (AB 1807, Tanner, 1983). In California, formaldehyde has been identified as a carcinogen. Chronic exposure is associated with respiratory symptoms and eye, nose, and throat irritation.

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Directly emitted formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is used in resins, can be found in many consumer products as an anti-microbial agent, and is also used in fumigants and soil disinfectants. About 84 percent of direct formaldehyde emissions are estimated to come from the combustion of fossil fuels from mobile sources. Approximately 33 percent of the total statewide formaldehyde emissions can be attributed to on-road motor vehicles, with an additional 51 percent attributed to other mobile sources such as aircraft, recreational boats, and construction and mining equipment. Area-wide sources contribute approximately nine percent and stationary sources contribute approximately eight percent of the statewide formaldehyde emissions in California. The primary area-wide sources of formaldehyde emissions include wood burning in residential fireplaces and wood stoves.

Formaldehyde		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1875	8%
Area-wide Sources	2005	9%
On-Road Mobile	7534	33%
Gasoline Vehicles	3052	13%
Diesel Vehicles	4483	19%
Other Mobile	11739	51%
Gasoline Fuel	2779	12%
Diesel Fuel	7073	31%
Other Fuel	1887	8%
Natural Sources	0	0%
Total Statewide	***23154***	***100%***

Table 5-15

2006 Top Ten Counties - Formaldehyde

The top ten counties account for approximately 50 percent of the statewide formaldehyde emissions. The South Coast Air Basin has three of the top ten counties emitting formaldehyde, representing 24 percent of statewide formaldehyde emissions. The seven other counties in the top ten for formaldehyde emissions are: San Diego, Kern (San Joaquin Valley portion), San Bernardino (Mojave Desert portion), Alameda, Fresno, Santa Clara, and San Joaquin. These seven counties account for approximately 29 percent of statewide formaldehyde emissions.

Formaldehyde			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	3350	14%
San Diego	San Diego	1426	6%
Kern	San Joaquin Valley	1392	6%
Orange	South Coast	1064	5%
San Bernardino	Mojave Desert	915	4%
Alameda	San Francisco Bay Area	816	4%
Fresno	San Joaquin Valley	746	3%
Santa Clara	San Francisco Bay Area	682	3%
San Bernardino	South Coast	669	3%
San Joaquin	San Joaquin Valley	617	3%

Table 5-16

Formaldehyde

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of formaldehyde in its statewide air toxics monitoring network. Its statewide annual average concentrations and associated health risk are available for 1990 through 2005. However, values prior to 1996 are uncertain because the data were based on a method that underestimated the actual concentrations. A method change in 1996 corrected this problem, but a correction factor could not be developed for the earlier data. While the data prior to the method change are included here for completeness, they are not directly comparable to data collected during the later years. The trend graph for formaldehyde, shown in Figure 5-9, shows a great deal of variability with a general upward trend.

To examine the trend in formaldehyde using available data while minimizing the influences of weather on the trend, the statewide average concentration for 1996-1998 was compared to that for 2003-2005 (since formaldehyde data prior to 1996 are not reliable). There is a two percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2005, there was an estimated risk of 21 excess cancer cases per million people from formaldehyde alone. Based on data for all ten TACs presented in this almanac, formaldehyde ranks fifth in terms of health risk. As with other TACs, the health risk is not spread evenly throughout the State, so in some areas the health risk is higher than the statewide average while in other areas, the health risk is lower.

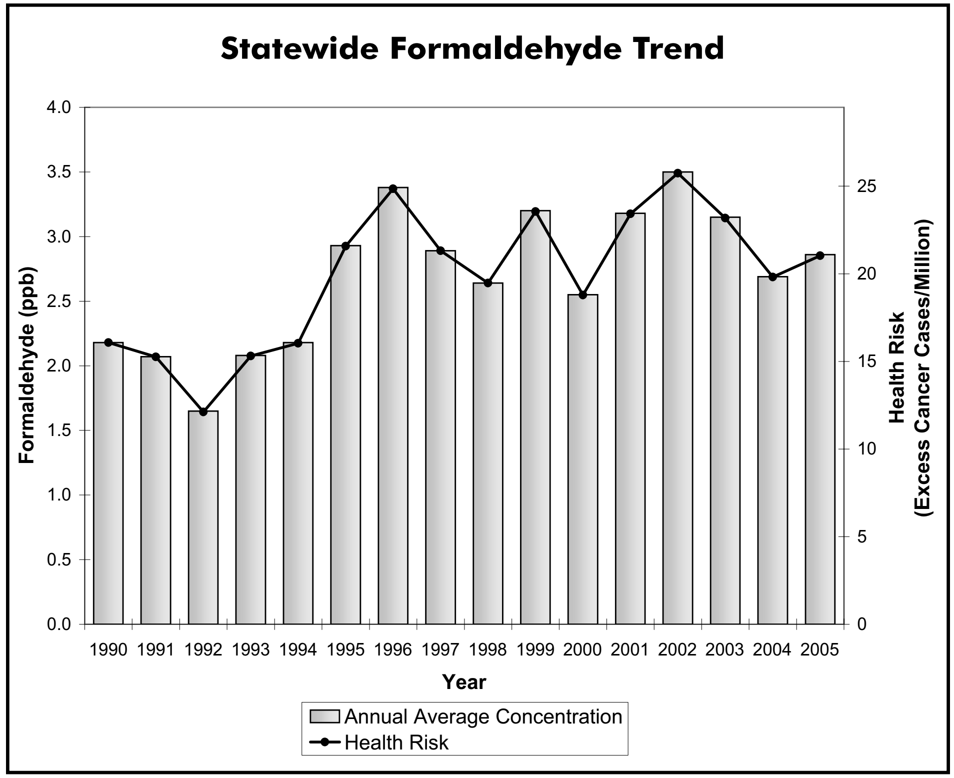

Figure 5-9

Although formaldehyde is emitted by both stationary and mobile sources, mobile sources are, by far, the largest contributors. The ARB adopted the Low Emissions/Clean Fuels Regulations in 1990, and these regulations are expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. Formaldehyde, similar to acetaldehyde, can also be formed in the environment due to reactions of pollutants in the air. This secondary contribution is hard to quantify and can also contribute to fluctuations observed in the ambient levels of formaldehyde.

Formaldehyde also poses a problem for indoor air quality, and its concentrations indoors are generally higher. This is because many building materials, consumer products, and fabrics emit formaldehyde. As a result, indoor formaldehyde levels are expected to remain higher than outdoor levels because of new materials brought into homes, as a consequence of remodeling or purchasing new furnishings. Other indoor combustion sources such as wood and gas stoves, kerosene heaters, and cigarettes also contribute to indoor formaldehyde levels, although intermittently.

On April 26, 2007, the ARB adopted an ATCM to reduce formaldehyde emissions from three composite wood products: hardwood plywood, particleboard, and medium density fiberboard. Composite wood is a general term for wood-based panels made from wood pieces, particles or fibers bonded together with a resin. Based on the average emissions of existing composite wood products, the adopted ATCM would reduce emissions of formaldehyde by about 20 percent in Phase 1 (2009) or about 180 tons per year. In Phase 2 (2011-2012), a 57 percent reduction in formaldehyde emissions or 500 tons per year would be achieved. Because the ATCM would reduce indoor formaldehyde exposures, substantial benefits would be realized by buyers of new homes as well as those with existing homes due to reduced emissions from remodeling projects and new furniture. The Phase 1 standards would reduce the number of formaldehyde-related childhood exposure cancer cases by 3 to 9, and the lifetime exposure cancer cases by 12 to 35 per million. In Phase 2, childhood exposure cancer cases would be reduced by 9 to 26, and lifetime exposure cancer cases by 35 to 97 per million.

Methylene Chloride

2006 Statewide Emission Inventory

The ARB identified methylene chloride as a TAC in 1987 under California's TAC program. In California, methylene chloride has been identified as a carcinogen. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity.

Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride. These sources contribute approximately 45 percent of the statewide methylene chloride emissions. Area-wide sources contribute approximately 55 percent.

Methylene Chloride		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	2927	45%
Area-wide Sources	3599	55%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***6527***	***100%***

Table 5-17

2006 Top Ten Counties - Methylene Chloride

The top ten counties account for approximately 74 percent of the statewide methylene chloride emissions. The South Coast Air Basin has four of the top ten counties emitting methylene chloride, representing 54 percent of statewide methylene chloride emissions. Three counties in the San Francisco Bay Area Air Basin contribute approximately nine percent: Santa Clara County (four percent), Alameda County (three percent) and Contra Costa (two percent). The three other counties in the top ten for methylene chloride emissions are: San Diego, Sacramento, and Ventura. Together, these three counties account for approximately 11 percent of statewide methylene chloride emissions.

Methylene Chloride			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	2078	32%
Orange	South Coast	938	14%
San Diego	San Diego	367	6%
San Bernardino	South Coast	271	4%
Santa Clara	San Francisco Bay Area	265	4%
Riverside	South Coast	226	3%
Alameda	San Francisco Bay Area	216	3%
Sacramento	Sacramento Valley	182	3%
Ventura	South Central Coast	161	2%
Contra Costa	San Francisco Bay Area	123	2%

Table 5-18

Methylene Chloride

Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of methylene chloride in its statewide air toxics monitoring network. The trend graph in Figure 5-10 shows an overall downward trend with some variability, particularly during the early years. The drop in 2001 was substantial, and a slight downward trend has continued between 2002 and 2005. To examine the trend in methylene chloride while minimizing the influences of weather on the trend, the statewide average methylene chloride concentration for 1990-1992 was compared to that for 2003-2005. The result is a 75 percent decrease in both concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2005, there was an estimated risk from methylene chloride of less than one excess cancer case per million people. Of the ten compounds presented in this almanac, methylene chloride presents the lowest health risk, on a statewide basis. However, any level of risk is a concern from a public health standpoint.

In California, paint removers account for the largest use of methylene chloride, which is the primary ingredient in paint stripping formulations used for industrial, commercial, military, and domestic applications. The use of methylene chloride in consumer and automotive products has been significantly reduced through aggressive regulations adopted by the ARB. These regulations have reduced ambient concentrations and health risks.

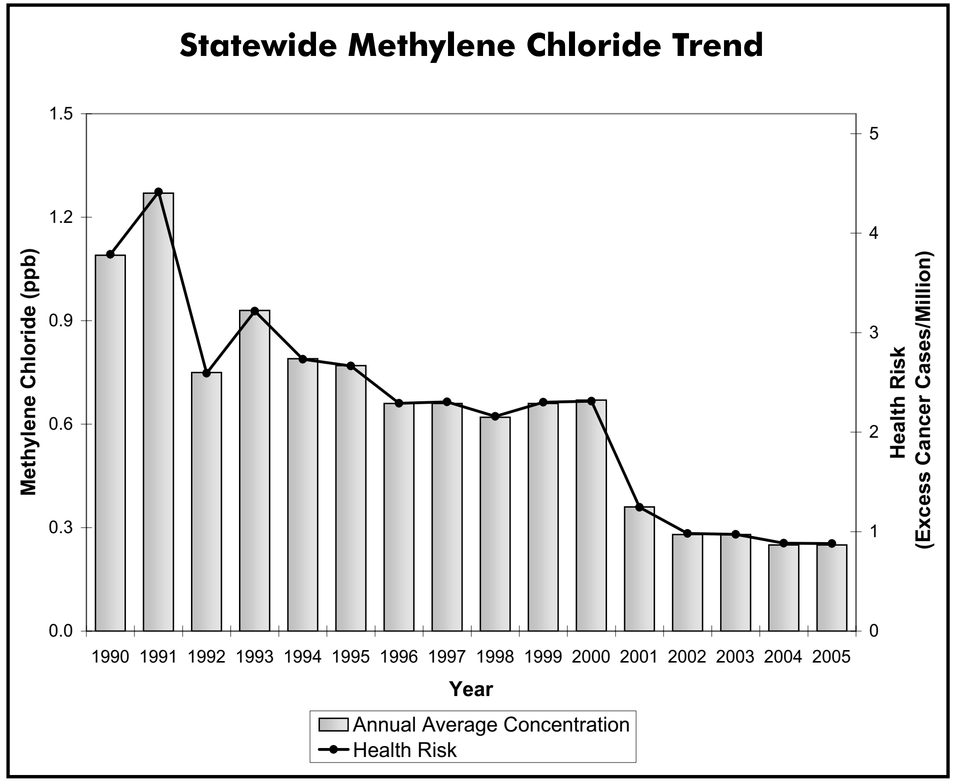

Figure 5-10

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Perchloroethylene

2006 Statewide Emission Inventory

The ARB identified perchloroethylene as a TAC in 1991 under California's TAC program (AB 1807, Tanner, 1983). In California, perchloroethylene has been identified as a carcinogen. Perchloroethylene vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity, as well as kidney dysfunction and neurological effects.

Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. These stationary sources account for 56 percent of the statewide emissions of perchloroethylene. Area-wide sources contribute approximately 44 percent. The primary area-wide sources include consumer products such as automotive brake cleaners and tire sealants and inflators.

Perchloroethylene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	2742	56%
Area-wide Sources	2123	44%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***4865***	***100%***

Table 5-19

2006 Top Ten Counties - Perchloroethylene

The top ten counties account for approximately 69 percent of the statewide perchloroethylene emissions. The South Coast Air Basin has four of the top ten counties emitting perchloroethylene, representing 43 percent of statewide perchloroethylene emissions. San Diego County contributes approximately nine percent. The five other counties in the top ten for perchloroethylene emissions are: Sacramento, Santa Clara, Alameda, Fresno, and San Joaquin. These five counties account for approximately 18 percent of statewide perchloroethylene emissions.

Perchloroethylene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	1263	26%
San Diego	San Diego	422	9%
Orange	South Coast	419	9%
Sacramento	Sacramento Valley	251	5%
San Bernardino	South Coast	212	4%
Riverside	South Coast	199	4%
Santa Clara	San Francisco Bay Area	172	4%
Alameda	San Francisco Bay Area	169	3%
Fresno	San Joaquin Valley	159	3%
San Joaquin	San Joaquin Valley	111	2%

Table 5-20

Perchloroethylene

Statewide Air Quality and Health Risk

The ARB routinely monitors outdoor levels of perchloroethylene in its statewide air toxics monitoring network. Although the trend graph for perchloroethylene in Figure 5-11 shows some variability during the early 1990s, there is an overall downward trend. To examine the trend in perchloroethylene over the monitoring period of record and to minimize the influences of weather on the trend, the statewide perchloroethylene concentration for 1990-1992 was compared to that for 2003-2005. The result is an 80 percent decrease in both concentration and health risk. For 1999, complete and representative data are not available.

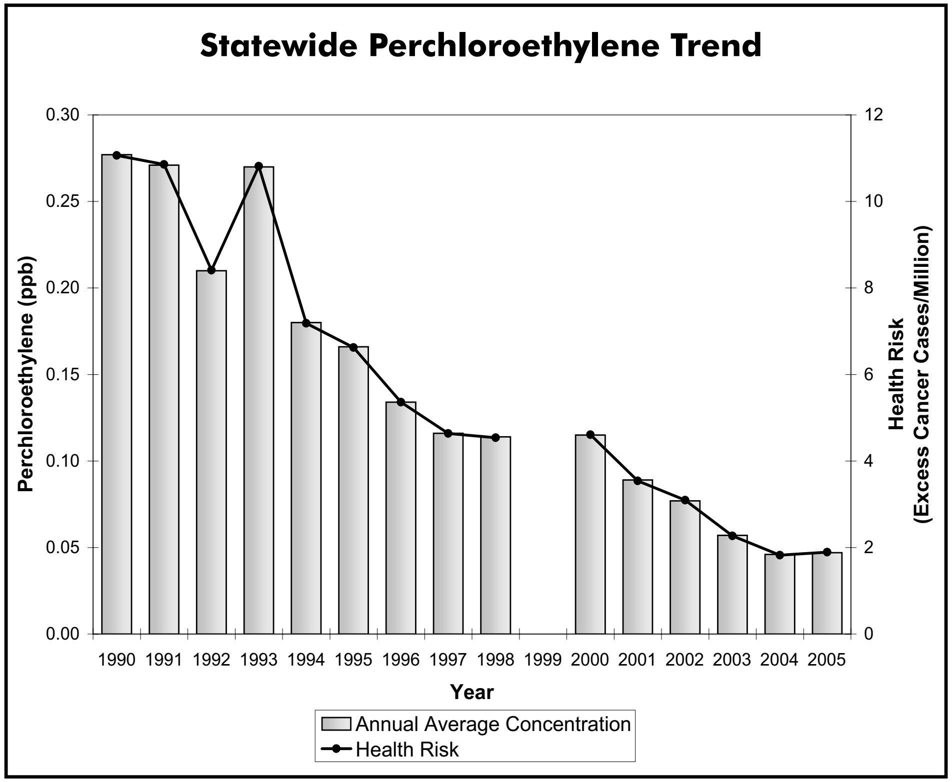

Figure 5-11

In Figure 5-11, health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level. During 2005, there was an estimated risk of two excess cancer cases per million people. Based on this, perchloroethylene ranks ninth out of the ten compounds presented in this almanac.

When the ARB identified perchloroethylene as a TAC in October 1991, it was estimated that 60 percent of perchloroethylene came from dry cleaning operations. Examination of industry practices suggested the potential for significant reductions of emissions. The ARB focused control efforts on that industry and adopted a control measure governing the use of perchloroethylene in dry cleaning operations in 1993. In 2007, the ARB approved amendments to the Dry Cleaning ATCM which will virtually eliminate the potential health risk due to perchloroethylene emissions from dry cleaning machines. The approved amendments prohibit any new installation of perchloroethylene dry cleaning machines beginning on January 1, 2008 and begin a phase-out of existing machines. The complete phase out of perchloroethylene machines in dry cleaning operations will occur by January 1, 2023. Additionally, while perchloroethylene dry cleaning machines remain in use, the ARB will continue to provide training for dry cleaners on improved practices and methods for reducing emissions.

In addition, the ARB has developed control measures that prohibit the use of perchloroethylene in automotive and many consumer products, including aerosol coatings and adhesives.

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Diesel Particulate Matter

2006 Statewide Emission Inventory

The ARB identified the PM emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. In California, diesel engine exhaust has been identified as a carcinogen. Most researchers believe that diesel exhaust particles contribute the majority of the risk.

Diesel PM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about three percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report diesel PM emissions also include heavy construction (except highway), manufacturers of asphalt paving materials and blocks, and electrical generation.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB's October 2000 report entitled: "*Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*" (Diesel Risk Reduction Plan or Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC2001 (EMFAC1.99(f) 6/26/00), whereas the current estimates are based on EMFAC2007. The other mobile inventory includes revised estimates for ship diesel PM emissions. In 2005, ARB staff improved the methodology for estimating ship emissions by developing a consistent statewide methodology that incorporates more recent data on ship activities and emission factors. This has resulted in an increase of approximately 119 percent increase in the estimates for ship emissions as compared to estimates developed with previous methodologies.

Diesel PM		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1227	3%
Area-wide Sources	0	0%
On-Road Mobile	16936	40%
Gasoline Vehicles	0	0%
Diesel Vehicles	16936	40%
Other Mobile	24163	57%
Gasoline Fuel	0	0%
Diesel Fuel	24163	57%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***42326***	***100%***

Table 5-21

2006 Top Ten Counties - Diesel Particulate Matter

The top ten counties account for approximately 51 percent of the statewide diesel PM emissions. The South Coast Air Basin has four of the top ten counties emitting diesel particulate matter which represents 24 percent of statewide diesel PM emissions. Alameda contributes four percent, and San Diego contributes five percent. Three counties in the San Joaquin Air Basin contribute 11 percent: Kern (five percent), Fresno (four percent), and San Joaquin (three percent). The Mojave Desert portion of San Bernardino contributes approximately four percent.

Diesel PM			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	6525	15%
Kern	San Joaquin Valley	2099	5%
San Diego	San Diego	2083	5%
San Bernardino	Mojave Desert	1759	4%
Orange	South Coast	1587	4%
Alameda	San Francisco Bay Area	1584	4%
Fresno	San Joaquin Valley	1519	4%
San Joaquin	San Joaquin Valley	1213	3%
San Bernardino	South Coast	1075	3%
Riverside	South Coast	1058	2%

Table 5-22

Diesel Particulate Matter

Statewide Air Quality and Health Risk

The exhaust from diesel-fueled engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. More than 40 diesel exhaust components are listed by the State and federal governments as TACs or hazardous air pollutants. Most researchers believe that diesel PM contributes to the majority of the risk from exposure to diesel exhaust because the particles carry many of the harmful organics and metals present in the exhaust.

Unlike the other TACs presented in this almanac, the ARB does not monitor outdoor diesel PM because there is no routine method for monitoring ambient concentrations. However, the ARB made a preliminary estimation of diesel PM concentrations for the State's 15 air basins and for the State as a whole using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. The ARB subsequently updated the original statewide estimates based on the ratio between the previous estimate for 1990 and the most recent diesel PM emission inventory for the year 1990. The details of the methodology are described in Appendix VI to the ARB Diesel Risk Reduction Plan.

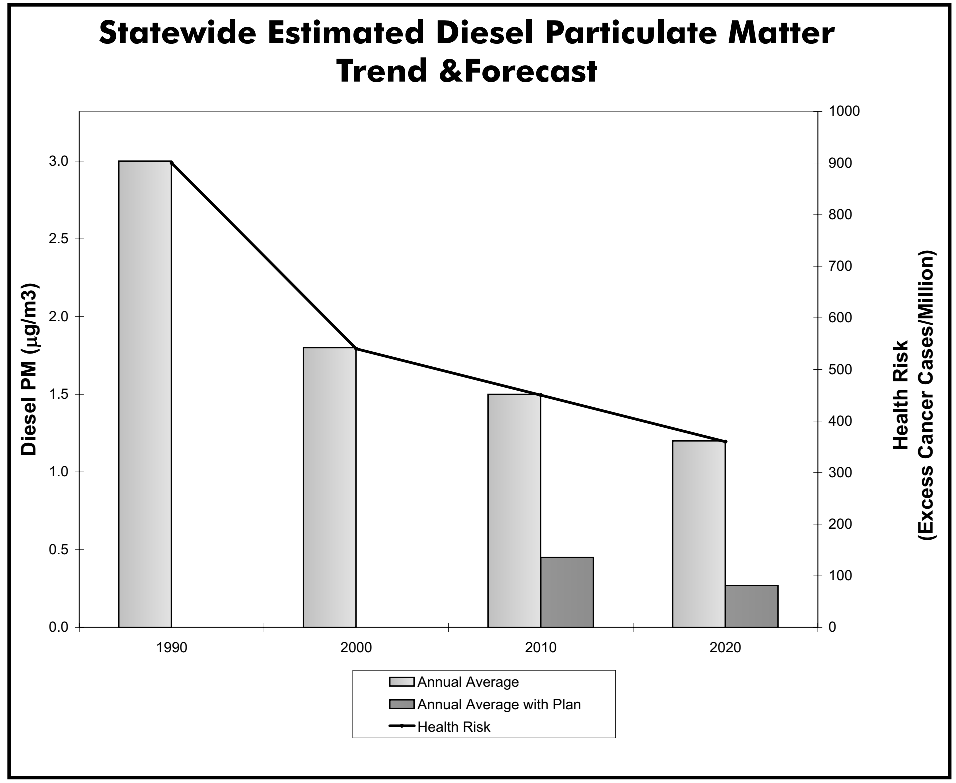


Figure 5-12

The updated statewide population-weighted average diesel PM concentrations and health risk for various years are shown in Figure 5-12. The average statewide concentration for 1990 was estimated at 3.0 micrograms per cubic meter ($\mu g/m^3$). This is associated with a health risk of 900 excess cancer cases per million people exposed over a 70-year lifetime. The estimates for 2000 show a 40 percent drop from 1990, with a concentration of 1.8 $\mu g/m^3$ and an associated health risk of 540 excess cancer cases per million people. In addition, the ARB estimated population-weighted concentrations for 2010 and 2020. Two estimates are given for each of these years: one reflecting the estimated ambient concentrations without implementing the Diesel Risk Reduction Plan and one reflecting the estimated ambient concentrations with implementation of control measures in the Diesel Risk Reduction Plan. These future year estimates are based on linear extrapolations from the 1990 emissions inventory and linear rollback techniques. It is important to note that the estimated risk from diesel PM is higher than the risk from all other TACs combined, and this TAC poses the most significant risk to California's citizens. In fact, the ARB estimates that 77 percent of the known statewide cancer risk from the top 10 outdoor air toxics is attributable to diesel PM.

The Diesel Risk Reduction Plan provides a mechanism for combating the diesel PM problem. Without implementing the Plan, concentrations in 2010 and 2020 are estimated to drop by only about 17 percent and 33 percent, respectively, from the estimated year 2000 level. However, the goal of the Plan is to reduce concentrations by 75 percent by 2010 and 85 percent by 2020. The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the Diesel Risk Reduction Plan will significantly reduce emissions from both old and new diesel-fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, diesel PM concentrations and associated health risks should continue to decline.

South Coast Air Basin
2006 Emission Inventory by Compound

Acetaldehyde

Approximately 95 percent of the emissions of acetaldehyde are from mobile sources.

Benzene

The primary sources of benzene emissions in the South Coast Air Basin are mobile sources (approximately 95 percent).

South Coast - Acetaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	17	1%	<1%
Area-wide Sources	90	4%	1%
On-Road Mobile	869	38%	9%
Gasoline Vehicles	327	14%	3%
Diesel Vehicles	543	24%	5%
Other Mobile	1325	58%	13%
Gasoline Fuel	265	11%	3%
Diesel Fuel	1049	46%	10%
Other Fuel	11	<1%	<1%
Natural Sources	0	0%	0%
Total	2302	100%	23%
Total Statewide	10023		

Table 5-23

South Coast - Benzene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	142	4%	1%
Area-wide Sources	45	1%	0%
On-Road Mobile	2109	59%	17%
Gasoline Vehicles	1962	55%	16%
Diesel Vehicles	148	4%	1%
Other Mobile	1282	36%	11%
Gasoline Fuel	987	28%	8%
Diesel Fuel	286	8%	2%
Other Fuel	10	0%	0%
Natural Sources	0	0%	0%
Total	3578	100%	30%
Total Statewide	12060		

Table 5-24

1,3-Butadiene

Approximately 89 percent of the emissions of 1,3-butadiene are from mobile sources.

Carbon Tetrachloride

Stationary sources, such as chemical manufacturers and petroleum refineries, account for all of the emissions of carbon tetrachloride.

South Coast - 1,3-Butadiene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	5	1%	0%
Area-wide Sources	20	3%	1%
On-Road Mobile	428	56%	12%
Gasoline Vehicles	414	54%	12%
Diesel Vehicles	14	2%	0%
Other Mobile	251	33%	7%
Gasoline Fuel	224	29%	6%
Diesel Fuel	27	4%	1%
Other Fuel	< 1	0%	0%
Natural Sources	62	8%	2%
Total	766	100%	21%
Total Statewide	3589		

Table 5-25

South Coast - Carbon Tetrachloride			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	0.75	100%	39%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.75	100%	39%
Total Statewide	1.96		

Table 5-26

Chromium, Hexavalent

On-road mobile sources account for 66 percent of the hexavalent chromium emissions. Approximately 33 percent of the hexavalent chromium emissions are from stationary sources such as chrome platers, aircraft and parts manufacturing, and fabricated metal product manufacturing.

South Coast - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.03	33%	3%
Area-wide Sources	< .01	1%	0%
On-Road Mobile	0.07	66%	6%
Gasoline Vehicles	0.06	64%	5%
Diesel Vehicles	< .01	2%	0%
Other Mobile	< .01	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	< .01	0%	0%
Other Fuel	< .01	0%	0%
Natural Sources	0	0%	0%
Total	0.10	100%	9%
Total Statewide	**1.17**		

Table 5-27

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

South Coast - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	623	100%	42%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	623	100%	42%
Total Statewide	**1469**		

Table 5-28

Formaldehyde

Approximately 90 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 57 percent of the emissions of methylene chloride are from stationary sources such as plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers.

South Coast - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	357	6%	2%
Area-wide Sources	186	3%	1%
On-Road Mobile	2183	39%	9%
Gasoline Vehicles	1097	19%	5%
Diesel Vehicles	1087	19%	5%
Other Mobile	2942	52%	13%
Gasoline Fuel	810	14%	3%
Diesel Fuel	2100	37%	9%
Other Fuel	32	1%	0%
Natural Sources	0	0%	0%
Total	5668	100%	24%
Total Statewide	**23154**		

Table 5-29

South Coast - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	2004	57%	31%
Area-wide Sources	1509	43%	23%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	3514	100%	54%
Total Statewide	**6527**		

Table 5-30

Perchloroethylene

Approximately 57 percent of the emissions of perchloroethylene are from dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

South Coast - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	1195	57%	25%
Area-wide Sources	898	43%	18%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	2093	100%	43%
Total Statewide	**4865**		

Table 5-31

Diesel Particulate Matter

Approximately 98 percent of the emissions of diesel PM are from mobile sources.

South Coast - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	199	2%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	4249	41%	10%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	4249	41%	10%
Other Mobile	5797	57%	14%
Gasoline Fuel	0	0%	0%
Diesel Fuel	5797	57%	14%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	10245	100%	24%
Total Statewide	**42326**		

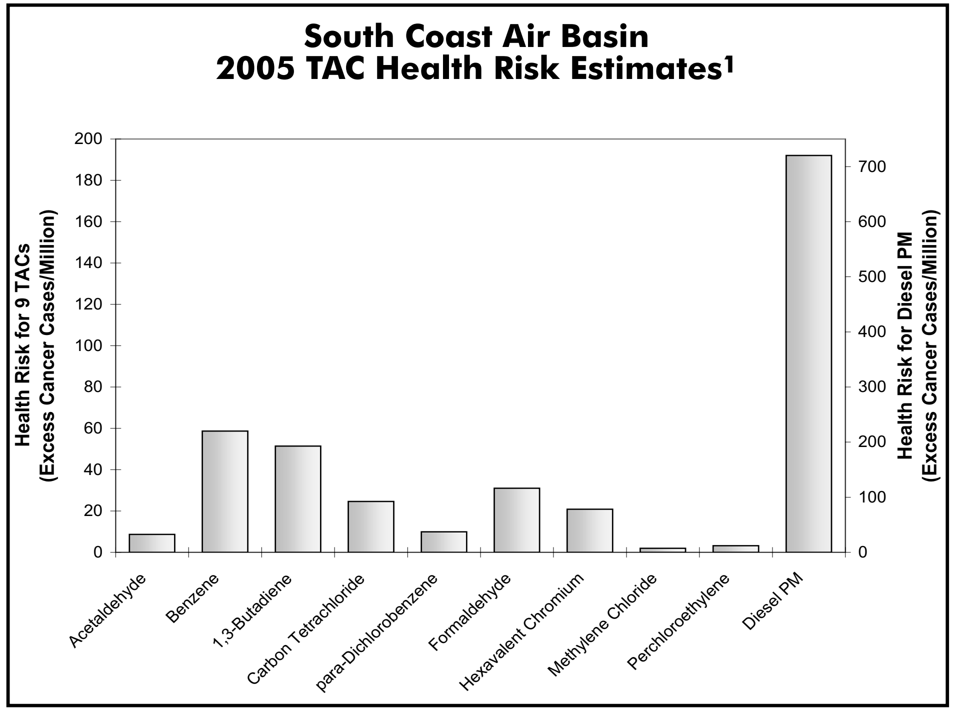
Table 5-32

South Coast Air Basin

Air Quality and Health Risk

From 1990 through 2005, the ARB monitored outdoor concentrations for various TACs at seven sites in the South Coast Air Basin. Data are available for most of the years at sites located in Burbank, Los Angeles, North Long Beach, and Riverside. Measurements for 1990 through 1997 are also available from a site at Upland. In addition, there are data for 1998 at a site in Fontana. During December 1999, monitoring activities for most of the TACs at Fontana were relocated to Azusa. Annual average concentration and associated health risk are not available for the year during which the site was moved because neither site had a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the South Coast Air Basin, are provided in Table 5-33. Data for individual sites are provided in Appendix C. Figure 5-13 shows individual health risk from the ten TACs for the South Coast Air Basin. As indicated on the graph, the health risk data reflect the year of 2005 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.



[1] *Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2005.*

Figure 5-13

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.

Diesel PM poses the greatest health risk among the ten TACs. In the South Coast Air Basin, the estimated health risk from diesel PM was 720 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 33 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2003-2005. The health risks of 1,3-butadiene and benzene have been reduced by 71 percent and 78 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 59 percent and 83 percent, respectively.

Carbon tetrachloride data show a 33 percent decrease comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2005 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2003-2005. Acetaldehyde and formaldehyde show a 12 percent and 11 percent reduction, respectively.

Para-dichlorobenzene data show a nine percent decrease comparing periods between 1991-1993 and 2003-2005. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements. The ARB is exploring options to better assess the *para*-dichlorobenzene concentrations that are below its LOD.

Hexavalent chromium data show a 56 percent decrease comparing periods between 1992-1994 and 2003-2005. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

Overall, in the South Coast Air Basin, all TACs have shown improvement since 1990, but their health risks are still higher than the statewide levels. It is important to note that there may be other compounds that pose a significant health risk but are not monitored. Reductions in ambient TAC concentrations and health risks should continue, as new rules and regulations are implemented to control TACs.

In addition to the routine monitoring, a special study was conducted at two sites located in the Boyle Heights and Wilmington areas of Los Angeles between February 2001 and May 2002 (Boyle Heights) and between May 2001 and July 2002 (Wilmington). Monitoring included both TACs and criteria air pollutants. Limited monitoring of a few pollutants was conducted at two satellite sites in Boyle Heights from March 2001 through October 2001, and at one satellite site in Wilmington from November 2001 through May 2002. The Boyle Heights and Wilmington communities are both located near major freeways. The Wilmington community is also located near oil refineries and port facilities. Although not included in this almanac, data from Boyle Heights, Wilmington, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

South Coast Air Basin

Annual Average Concentrations and Health Risks

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	2.46	3	2.46	2.67	2.3	0.97	2.08	1.77	1.54	1.63	1.26	1.47	1.41	1.47	1.46	1.79
	Health Risk	12	15	12	13	11	5	10	9	7	8	6	7	7	7	7	9
Benzene	Annual Avg	3.42	2.91	2.61	2.17	2.4	1.89	1.45	1.34	1.25	1.2	0.97	0.86	0.769	0.745	0.589	0.634
	Health Risk	317	269	242	201	222	175	134	124	116	111	90	80	71	69	55	59
1,3-Butadiene	Annual Avg	0.532	0.452	0.498	0.565	0.497	0.459	0.39	0.378	0.354	0.328	0.251	0.251	0.211	0.147	0.143	0.137
	Health Risk	200	170	187	212	187	173	146	142	133	123	94	94	79	55	54	51
Carbon Tetrachloride	Annual Avg	0.136	0.134		0.105		0.102	0.079		0.114		0.096	0.086	0.092	0.093		
	Health Risk	36	35		28		27	21		30		25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.39	0.29	0.29	0.46	0.18	0.17	0.15	0.14	0.18		0.179	0.158	0.126	0.139
	Health Risk			59	43	43	69	27	25	22	22	27		27	24	19	21
para-Dichlorobenzene	Annual Avg		0.17	0.19	0.17	0.13	0.17	0.11	0.13			0.13	0.15	0.16	0.17	0.16	0.15
	Health Risk		11	13	11	8	11	7	9			9	10	11	11	11	10
Formaldehyde	Annual Avg	2.92	3.08	2.22	3.22	3.14	3.57	5.06	4.47	3.79	4.06	3.13	4.13	4.16	3.83	3.76	4.21
	Health Risk	22	23	16	24	23	26	37	33	28	30	23	30	31	28	28	31
Methylene Chloride	Annual Avg	1.86	1.51	0.9	1.23	1.1	1.28	0.95	1.14	0.85	0.92	0.83	0.63	0.57	0.59	0.57	0.57
	Health Risk	6	5	3	4	4	4	3	4	3	3	3	2	2	2	2	2
Perchloroethylene	Annual Avg	0.576	0.547	0.412	0.448	0.393	0.364	0.32	0.274	0.259		0.207	0.176	0.146	0.105	0.082	0.08
	Health Risk	23	22	16	18	16	15	13	11	10		8	7	6	4	3	3
Diesel PM[3]	*Annual Avg*	*(3.6)*					*(2.7)*					*(2.4)*					
	Health Risk	*(1080)*					*(810)*					*(720)*					
Average Basin Risk	w/o Diesel PM	*616*	550	548	554	514	*505*	398	357	349	297	*285*	253	258	225	179	186
	w/ Diesel PM	***(1696)***					***(1315)***					***(1005)***					

1 Concentrations for Hexavalent Chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-33

San Francisco Bay Area Air Basin
2006 Emission Inventory by Compound

Acetaldehyde

Approximately 80 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion and agricultural burning contribute approximately 19 percent.

San Francisco Bay Area - Acetaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	7	0%	0%
Area-wide Sources	294	19%	3%
On-Road Mobile	350	23%	3%
Gasoline Vehicles	166	11%	2%
Diesel Vehicles	185	12%	2%
Other Mobile	869	57%	9%
Gasoline Fuel	113	7%	1%
Diesel Fuel	609	40%	6%
Other Fuel	147	10%	1%
Natural Sources	0	0%	0%
Total	1521	100%	15%
Total Statewide	10023		

Table 5-34

Benzene

Mobile sources are the primary sources of benzene emissions in the San Francisco Bay Area Air Basin (approximately 92 percent).

San Francisco Bay Area - Benzene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	114	6%	1%
Area-wide Sources	38	2%	0%
On-Road Mobile	1031	56%	9%
Gasoline Vehicles	981	53%	8%
Diesel Vehicles	50	3%	0%
Other Mobile	653	36%	5%
Gasoline Fuel	427	23%	4%
Diesel Fuel	166	9%	1%
Other Fuel	60	3%	0%
Natural Sources	0	0%	0%
Total	1836	100%	15%
Total Statewide	12060		

Table 5-35

1,3-Butadiene

Most of the emissions of 1,3-butadiene are from mobile sources.

San Francisco Bay Area - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	2	0%	0%
Area-wide Sources	2	1%	0%
On-Road Mobile	211	53%	6%
Gasoline Vehicles	206	52%	6%
Diesel Vehicles	5	1%	0%
Other Mobile	161	41%	4%
Gasoline Fuel	96	24%	3%
Diesel Fuel	16	4%	0%
Other Fuel	49	12%	1%
Natural Sources	19	5%	1%
Total	394	100%	11%
Total Statewide	**3589**		

Table 5-36

Carbon Tetrachloride

Stationary sources, such as chemical and petroleum refineries, account for all of the emissions of carbon tetrachloride.

San Francisco Bay Area - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.94	100%	48%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.94	100%	48%
Total Statewide	**1.96**		

Table 5-37

Chromium, Hexavalent

Approximately 62 percent of the hexavalent chromium emissions are from other mobile sources. On-road mobile sources account for approximately 32 percent of hexavalent chromium emissions. Stationary sources such as electrical generation and fabricated metal product manufacturing contribute approximately four percent.

San Francisco Bay Area - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< .01	6%	0%
Area-wide Sources	< .01	1%	0%
On-Road Mobile	0.03	32%	2%
Gasoline Vehicles	0.02	31%	2%
Diesel Vehicles	< .01	1%	0%
Other Mobile	0.05	62%	4%
Gasoline Fuel	< .01	0%	0%
Diesel Fuel	< .01	0%	0%
Other Fuel	0.05	61%	4%
Natural Sources	0	0%	0%
Total	0.08	100%	7%
Total Statewide	**1.17**		

Table 5-38

para-Dichlorobenzene

Emissions of *para*-dichlorobenzene are essentially all from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Francisco Bay Area - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	278	100%	19%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	279	100%	19%
Total Statewide	**1469**		

Table 5-39

Formaldehyde

Approximately 84 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 72 percent of the emissions of methylene chloride are from area-wide sources.

San Francisco Bay Area - Formaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	175	5%	1%
Area-wide Sources	384	11%	2%
On-Road Mobile	913	26%	4%
Gasoline Vehicles	543	16%	2%
Diesel Vehicles	369	11%	2%
Other Mobile	2016	58%	9%
Gasoline Fuel	344	10%	1%
Diesel Fuel	1219	35%	5%
Other Fuel	453	13%	2%
Natural Sources	0	0%	0%
Total	3488	100%	15%
Total Statewide	23154		

Table 5-40

San Francisco Bay Area - Methylene Chloride			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	271	28%	4%
Area-wide Sources	692	72%	11%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	963	100%	15%
Total Statewide	6527		

Table 5-41

Perchloroethylene

Approximately 57 percent of the emissions of perchloroethylene are from such area-wide sources as automotive brake cleaners and other consumer products.

San Francisco Bay Area - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	306	43%	6%
Area-wide Sources	402	57%	8%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	709	100%	15%
Total Statewide	**4865**		

Table 5-42

Diesel Particulate Matter

Emissions of diesel PM are primarily from mobile sources.

San Francisco Bay Area - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	82	2%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	1424	30%	3%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	1424	30%	3%
Other Mobile	3191	68%	8%
Gasoline Fuel	0	0%	0%
Diesel Fuel	3191	68%	8%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	4697	100%	11%
Total Statewide	**42326**		

Table 5-43

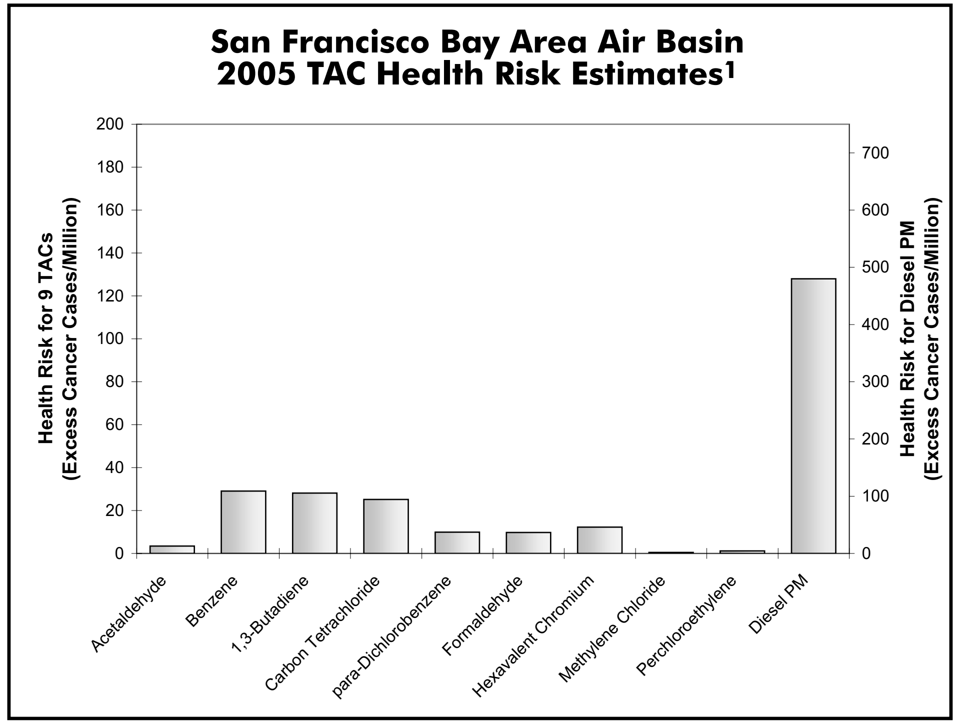
San Francisco Bay Area Air Basin

Air Quality and Health Risk

From 1990 through 2005, the ARB monitored outdoor concentration for various TACs at six sites in the San Francisco Bay Area Air Basin. Data for the entire time period are available from sites located in Fremont and San Francisco. The San Jose-Fourth Street site has measurements from 1990 through 2001; this site was relocated to San Jose-Jackson Street in mid-2002. Data are also available from a site at Concord from 1990 through 1999. In addition, there was a monitor at Richmond from 1990 through April 1997. This site was relocated to San Pablo and began sampling there in May 1997. At the end of February 2000, TAC monitoring was discontinued at the Concord and San Pablo sites, and additional data from these sites will not be available. Annual average concentration and associated health risk are unavailable for the year during a site move because neither site has a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Francisco Bay Area Air Basin, are provided in Table 5-44. Data for individual sites are provided in Appendix C. Figure 5-14 shows individual health risk from the ten TACs for the San Francisco Bay Area Air Basin. As indicated on the graph, the health risk data reflect the year of 2005 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.



[1] *Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2005.*

Figure 5-14

Diesel PM poses the greatest health risk among the ten TACs. In the San Francisco Bay Area Air Basin, the estimated health risk from diesel PM was 480 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 36 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2003-2005. The health risks of 1,3-butadiene and benzene have been reduced by 71 percent and 80 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 88 percent and 83 percent, respectively.

Carbon tetrachloride data show a 29 percent decrease comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2005 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2003-2005. Acetaldehyde and formaldehyde show one percent and 16 percent reduction, respectively.

Para-dichlorobenzene data show a 31 percent increase comparing periods between 1991-1993 and 2003-2005. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements. The ARB is exploring options to better assess the *para*-dichlorobenzene concentrations that are below its LOD.

Hexavalent chromium data show a 57 percent decrease comparing periods between 1992-1994 and 2003-2005. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

In addition to the routine monitoring, a special study was conducted at two sites, located in the Crockett and Fruitvale/Oakland areas of the San Francisco Bay Area Air Basin between October 2001 and May 2003 (Crockett) and between November 2001 and April 2003 (Fruitvale). Monitoring included both TACs and criteria air pollutants. The Crockett community is located near high-risk facilities, including mobile source emissions. Oil refineries and major oil storage facilities are located in nearby cities to Crockett. Crockett is also the location of a major food processing operation and a heavy-rail transfer facility. The Fruitvale community lies between two major freeways that are a significant source of vehicular emissions. The Fruitvale area is also downwind of several industrial operations that are sources of pollution. Although not included in this almanac, data from Crockett, Fruitvale, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

San Francisco Bay Area Air Basin
Annual Average Concentrations and Health Risks

San Francisco Bay Area Air Basin Toxic Air Contaminants - Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.3	1.4	1.03	1.31	1.17	0.42	0.83	0.73	0.65	0.76	0.68	0.73	0.63	0.74	0.74	0.71
	Health Risk	6	7	5	6	6	2	4	4	3	4	3	4	3	4	4	3
Benzene	Annual Avg	2.18	1.82	1.49	1.49	1.4	1.26	0.71	0.61	0.71	0.6	0.56	0.425	0.454	0.439	0.372	0.314
	Health Risk	202	169	138	138	129	116	66	56	66	55	52	39	42	41	34	29
1,3-Butadiene	Annual Avg	0.359	0.287	0.275	0.367	0.287	0.277	0.218	0.187	0.217	0.17	0.149	0.133	0.137	0.098	0.09	0.075
	Health Risk	135	108	103	138	108	104	82	70	82	64	56	50	51	37	34	28
Carbon Tetrachloride	Annual Avg	0.128	0.125		0.108		0.1	0.078				0.094	0.087	0.089	0.095		
	Health Risk	34	33		29		26	21				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.23	0.2	0.19	0.25	0.13	0.12	0.1	0.1	0.12		0.074	0.096	0.091	0.082
	Health Risk			34	29	29	37	19	17	15	15	18		11	14	14	12
para-Dichlorobenzene	Annual Avg		0.12	0.12	0.12	0.11	0.13	0.14	0.12			0.11	0.14	0.15	0.15	0.17	0.15
	Health Risk		8	8	8	7	8	9	8			7	9	10	10	11	10
Formaldehyde	Annual Avg	1.87	1.73	1.43	1.56	1.66	2.06	2.62	1.85	1.76	2.09	1.77	2.32	2.57	2.22	1.71	1.32
	Health Risk	14	13	11	11	12	15	19	14	13	15	13	17	19	16	13	10
Methylene Chloride	Annual Avg	1.04	2.32	0.65	0.72	0.59	0.6	0.58	0.55			0.53	0.27	0.22	0.22	0.14	0.13
	Health Risk	4	8	2	2	2	2	2	2			2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.204	0.232	0.169	0.128	0.082	0.094	0.067	0.071			0.078	0.059	0.052	0.039	0.035	0.029
	Health Risk	8	9	7	5	3	4	3	3			3	2	2	2	1	1
Diesel PM[3]	*Annual Avg*	*(2.5)*					*(1.9)*					*(1.6)*					
	Health Risk	*(750)*					*(570)*					*(480)*					
Average Basin Risk	w/o Diesel PM	*403*	355	308	366	296	*314*	225	174	179	153	*179*	144	162	149	111	93
	w/ Diesel PM	*(1153)*					*(884)*					*(659)*					

1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-44

San Joaquin Valley Air Basin
2006 Emission Inventory by Compound

Acetaldehyde

Approximately 87 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion account for approximately 10 percent.

San Joaquin Valley - Acetaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	56	3%	1%
Area-wide Sources	177	10%	2%
On-Road Mobile	731	42%	7%
Gasoline Vehicles	100	6%	1%
Diesel Vehicles	631	36%	6%
Other Mobile	797	45%	8%
Gasoline Fuel	81	5%	1%
Diesel Fuel	587	33%	6%
Other Fuel	129	7%	1%
Natural Sources	0	0%	0%
Total	1761	100%	18%
Total Statewide	**10023**		

Table 5-45

Benzene

The primary sources of benzene emissions in the San Joaquin Valley Air Basin are mobile sources (approximately 71 percent) and stationary sources (approximately 28 percent).

San Joaquin Valley - Benzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	502	28%	4%
Area-wide Sources	13	1%	0%
On-Road Mobile	752	42%	6%
Gasoline Vehicles	580	32%	5%
Diesel Vehicles	172	10%	1%
Other Mobile	522	29%	4%
Gasoline Fuel	308	17%	3%
Diesel Fuel	160	9%	1%
Other Fuel	54	3%	0%
Natural Sources	< 1	0%	0%
Total	1789	100%	15%
Total Statewide	**12060**		

Table 5-46

1,3-Butadiene

Approximately 54 percent of the emissions of 1,3-butadiene are from mobile sources.

San Joaquin Valley - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	2	<1%	<1%
Area-wide Sources	96	19%	3%
On-Road Mobile	140	28%	4%
Gasoline Vehicles	124	25%	3%
Diesel Vehicles	16	3%	<1%
Other Mobile	134	27%	4%
Gasoline Fuel	70	14%	2%
Diesel Fuel	15	3%	<1%
Other Fuel	49	10%	1%
Natural Sources	131	26%	4%
Total	503	100%	14%
Total Statewide	**3589**		

Table 5-47

Carbon Tetrachloride

There are no major sources of carbon tetrachloride in the San Joaquin Valley.

San Joaquin Valley - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0	0%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0	0%	0%
Total Statewide	**1.96**		

Table 5-48

Chromium, Hexavalent

Approximately 72 percent of the hexavalent chromium emissions are from mobile sources.

San Joaquin Valley - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.06	28%	5%
Area-wide Sources	< .01	0%	0%
On-Road Mobile	0.02	8%	1%
Gasoline Vehicles	0.02	7%	1%
Diesel Vehicles	< .01	1%	0%
Other Mobile	0.14	64%	12%
Gasoline Fuel	< .01	0%	0%
Diesel Fuel	< .01	0%	0%
Other Fuel	0.14	64%	12%
Natural Sources	0	0%	0%
Total	0.22	100%	19%
Total Statewide	**1.17**		

Table 5-49

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Joaquin Valley - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0	0%	0%
Area-wide Sources	147	100%	10%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	147	100%	10%
Total Statewide	**1469**		

Table 5-50

Formaldehyde

Approximately 78 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 84 percent of the emissions of methylene chloride are from paint removers/strippers, automotive brake cleaners, and other consumer products.

San Joaquin Valley - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	756	17%	3%
Area-wide Sources	210	5%	1%
On-Road Mobile	1593	36%	7%
Gasoline Vehicles	329	7%	1%
Diesel Vehicles	1264	29%	5%
Other Mobile	1837	42%	8%
Gasoline Fuel	246	6%	1%
Diesel Fuel	1174	27%	5%
Other Fuel	418	9%	2%
Natural Sources	0	0%	0%
Total	4396	100%	19%
Total Statewide	**23154**		

Table 5-51

San Joaquin Valley - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	68	16%	1%
Area-wide Sources	361	84%	6%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	429	100%	7%
Total Statewide	**6527**		

Table 5-52

Perchloroethylene

Approximately 64 percent of the emissions of perchloroethylene are from such stationary sources as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

San Joaquin Valley - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	375	64%	8%
Area-wide Sources	213	36%	4%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	588	100%	12%
Total Statewide	**4865**		

Table 5-53

Diesel Particulate Matter

Approximately 94 percent of the diesel PM emissions are from mobile sources.

San Joaquin Valley - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	482	6%	1%
Area-wide Sources	0	0%	0%
On-Road Mobile	4584	60%	11%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	4584	60%	11%
Other Mobile	2629	34%	6%
Gasoline Fuel	0	0%	0%
Diesel Fuel	2629	34%	6%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	7695	100%	18%
Total Statewide	**42326**		

Table 5-54

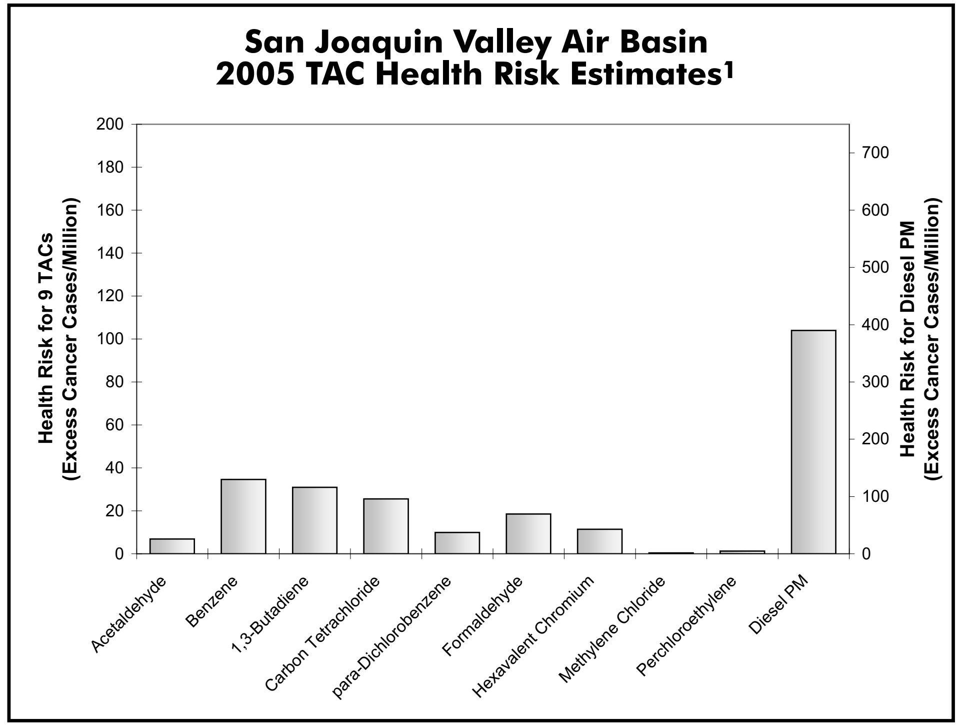
San Joaquin Valley Air Basin

Air Quality and Health Risk

From 1990 through 2005, the ARB monitored outdoor concentrations for various TACs at six sites in the San Joaquin Valley Air Basin. Data for all years are available only for the Stockton site. Data are available for 1991 through 2005 at the Fresno-First Street site, for 1990 through 1993 at the Bakersfield-Chester Avenue site, and for 1995 through 2003 at the Bakersfield-5558 California Avenue site. Data are also available at the Modesto-14th Street site from 1990 through 1999. In addition, limited TAC data are available at the Modesto-I Street site during 1991 to 1997. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Joaquin Valley Air Basin, are provided in Table 5-55. Data for individual sites are provided in Appendix C. Figure 5-15 shows individual health risk from the ten TACs for the San Joaquin Valley Air Basin. As indicated on the graph, the health risk data reflect the year of 2005 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.



[1] *Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2005.*

Figure 5-15

Diesel PM poses the greatest health risk among the ten TACs. In the San Joaquin Air Basin, the estimated health risk from diesel PM was 390 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 50 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2003-2005. The health risks of 1,3-butadiene and benzene have been reduced by 74 percent and 80 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 81 percent and 75 percent, respectively.

Carbon tetrachloride data show a 29 percent decrease comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2005 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2003-2005. Acetaldehyde shows a three percent increase while formaldehyde had a nine percent decrease.

Para-dichlorobenzene data show a 29 percent increase comparing periods between 1991-1993 and 2003-2005. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements. The ARB is exploring options to better assess the *para*-dichlorobenzene concentrations that are below its LOD.

Hexavalent chromium data show a 62 percent decrease comparing periods between 1992-1994 and 2003-2005. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. To better assess the hexavalent chromium measurements below the LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

In addition to the routine monitoring, a special study was conducted at a site located in the Fresno area of the San Joaquin Valley Air Basin between June 2002 and August 2003. Monitoring included both TACs and criteria air pollutants. This Fresno community is located in a residential neighborhood near sources of motor vehicle pollution. There are a large number of children living in the community. Although not included in the almanac, data from Fresno and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/communities/studies/fresno/fresno.htm*.

San Joaquin Valley Air Basin

Annual Average Concentrations and Health Risks

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.94	1.84	1.38	1.73	1.29	0.54	1.28	1.19	1.3	1.56	1.09	1.15	1.24	1.34	1.14	1.42
	Health Risk	9	9	7	8	6	3	6	6	6	8	5	6	6	7	6	7
Benzene	Annual Avg	2.45	2.11	1.36	1.32	1.33	1.16	0.73	0.71	0.76	0.69	0.63	0.538	0.552	0.463	0.372	0.374
	Health Risk	227	196	126	122	123	107	68	66	71	64	58	50	51	43	34	35
1,3-Butadiene	Annual Avg	0.409	0.36	0.236	0.339	0.323	0.264	0.222	0.195	0.233	0.177	0.158	0.15	0.146	0.095	0.08	0.082
	Health Risk	154	135	89	127	121	99	83	73	88	67	59	56	55	36	30	31
Carbon Tetrachloride	Annual Avg	0.128	0.129		0.109		0.098	0.077		0.114		0.096	0.086	0.091	0.097		
	Health Risk	34	34		29		26	20		30		25	23	24	26		
Chromium, Hexavalent	Annual Avg			0.23	0.21	0.19	0.28	0.13	0.11	0.1	0.1	0.12		0.086	0.078	0.083	0.076
	Health Risk			34	31	29	42	20	16	15	15	18		13	12	13	11
para-Dichlorobenzene	Annual Avg		0.11	0.11	0.13	0.11	0.11	0.1	0.13			0.11	0.13	0.15	0.15	0.15	0.15
	Health Risk		7	7	9	7	8	7	9			7	9	10	10	10	10
Formaldehyde	Annual Avg	2.45	1.81	1.46	1.67	1.8	2.1	2.96	2.77	2.86	3.44	2.61	3.08	3.13	3.02	2.27	2.52
	Health Risk	18	13	11	12	13	15	22	20	21	25	19	23	23	22	17	19
Methylene Chloride	Annual Avg	0.76	0.59	0.55	0.76	0.59	0.61	0.54	0.53	0.52	0.5	0.53	0.27	0.16	0.14	0.11	0.12
	Health Risk	3	2	2	3	2	2	2	2	2	2	2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.126	0.133	0.104	0.473	0.067	0.068	0.068	0.056	0.039		0.076	0.052	0.039	0.033	0.027	0.032
	Health Risk	5	5	4	19	3	3	3	2	2		3	2	2	1	1	1
Diesel PM[3]	*Annual Avg*	*(2.6)*					*(1.7)*					*(1.3)*					
	Health Risk	*(780)*					*(510)*					*(390)*					
Average Basin Risk	w/o Diesel PM	*450*	401	280	360	304	*305*	231	194	235	181	*196*	169	184	157	111	114
	w/ Diesel PM	*(1230)*					*(815)*					*(586)*					

1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-55

San Diego Air Basin
2006 Emission Inventory by Compound

Acetaldehyde

Approximately 92 percent of the emissions of acetaldehyde are from mobile sources.

San Diego - Acetaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	5	1%	0%
Area-wide Sources	45	8%	0%
On-Road Mobile	178	30%	2%
Gasoline Vehicles	79	13%	1%
Diesel Vehicles	98	17%	1%
Other Mobile	361	61%	4%
Gasoline Fuel	66	11%	1%
Diesel Fuel	224	38%	2%
Other Fuel	71	12%	1%
Natural Sources	0	0%	0%
Total	589	100%	6%
Total Statewide	10023		

Table 5-56

Benzene

The primary sources of benzene emissions in the San Diego Air Basin are mobile sources (approximately 95 percent).

San Diego - Benzene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	39	5%	0%
Area-wide Sources	4	0%	0%
On-Road Mobile	488	56%	4%
Gasoline Vehicles	462	53%	4%
Diesel Vehicles	27	3%	0%
Other Mobile	338	39%	3%
Gasoline Fuel	248	29%	2%
Diesel Fuel	61	7%	1%
Other Fuel	29	3%	0%
Natural Sources	0	0%	0%
Total	869	100%	7%
Total Statewide	12060		

Table 5-57

1,3-Butadiene

Approximately 78 percent of the emissions of 1,3-butadiene are from mobile sources, and 22 percent from natural sources.

San Diego - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	1	<1%	<1%
Area-wide Sources	< 1	<1%	<1%
On-Road Mobile	101	42%	3%
Gasoline Vehicles	99	41%	3%
Diesel Vehicles	3	1%	<1%
Other Mobile	87	36%	2%
Gasoline Fuel	56	23%	2%
Diesel Fuel	6	2%	<1%
Other Fuel	24	10%	1%
Natural Sources	52	22%	1%
Total	241	100%	7%
Total Statewide	**3589**		

Table 5-58

Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

San Diego - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.09	100%	5%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.09	100%	5%
Total Statewide	**1.96**		

Table 5-59

Chromium, Hexavalent

Approximately 73 percent of the hexavalent chromium emissions are from other mobile sources. Stationary sources account for approximately 19 percent.

para-Dichlorobenzene

All of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Diego - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.04	19%	4%
Area-wide Sources	< .01	0%	0%
On-Road Mobile	0.02	7%	1%
Gasoline Vehicles	0.02	7%	1%
Diesel Vehicles	< .01	0%	0%
Other Mobile	0.17	73%	14%
Gasoline Fuel	< .01	0%	0%
Diesel Fuel	< .01	0%	0%
Other Fuel	0.17	73%	14%
Natural Sources	0	0%	0%
Total	0.23	100%	20%
Total Statewide	**1.17**		

Table 5-60

San Diego - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0	0%	0%
Area-wide Sources	122	100%	8%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	122	100%	8%
Total Statewide	**1469**		

Table 5-61

Formaldehyde

Approximately 94 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products account for approximately 82 percent of the emissions of methylene chloride.

San Diego - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	35	2%	0%
Area-wide Sources	56	4%	0%
On-Road Mobile	463	33%	2%
Gasoline Vehicles	267	19%	1%
Diesel Vehicles	197	14%	1%
Other Mobile	871	61%	4%
Gasoline Fuel	202	14%	1%
Diesel Fuel	448	31%	2%
Other Fuel	221	16%	1%
Natural Sources	0	0%	0%
Total	1426	100%	6%
Total Statewide	**23154**		

Table 5-62

San Diego - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	66	18%	1%
Area-wide Sources	301	82%	5%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	367	100%	6%
Total Statewide	**6527**		

Table 5-63

Perchloroethylene

Approximately 58 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

San Diego - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	245	58%	5%
Area-wide Sources	177	42%	4%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	422	100%	9%
Total Statewide	**4865**		

Table 5-64

Diesel Particulate Matter

Approximately 98 percent of the emissions of diesel PM are from mobile sources.

San Diego - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	32	2%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	760	36%	2%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	760	36%	2%
Other Mobile	1291	62%	3%
Gasoline Fuel	0	0%	0%
Diesel Fuel	1291	62%	3%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	2083	100%	5%
Total Statewide	**42326**		

Table 5-65

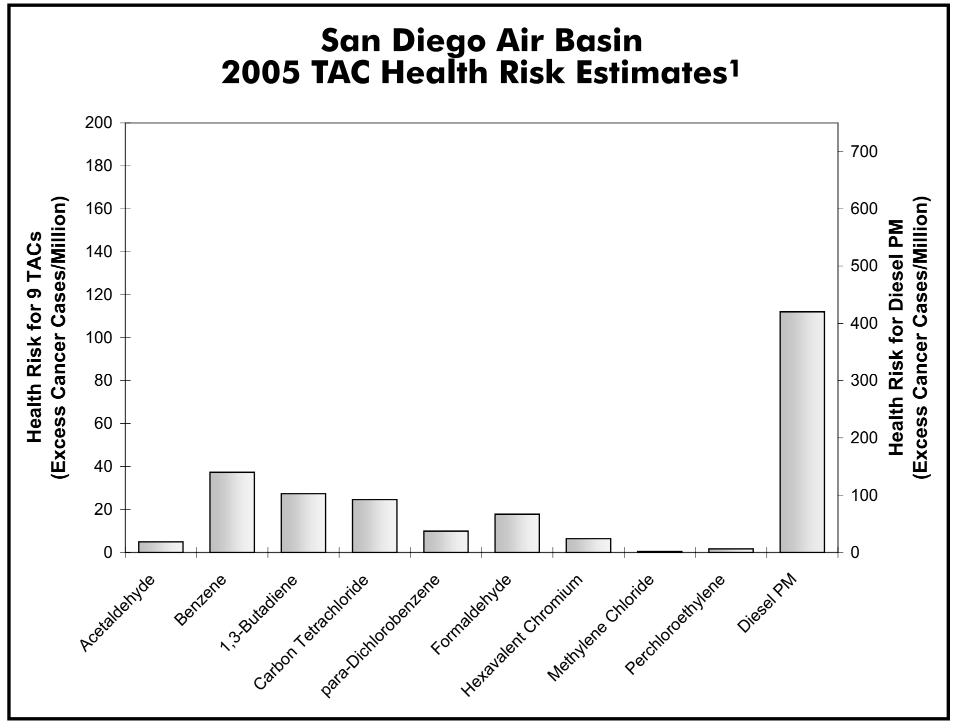
San Diego Air Basin

Air Quality and Health Risk

During 1990 through 2005, the ARB monitored outdoor concentrations for various TACs at two sites in the San Diego Air Basin. The sites are located in Chula Vista and El Cajon. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Diego Air Basin, are provided in Table 5-66. Data for individual sites are provided in Appendix C. Figure 5-16 shows individual health risk from the ten TACs for the San Diego Air Basin. As indicated on the graph, the health risk data reflect the year of 2005 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.



[1] Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2005.

Figure 5-16

Diesel PM poses the greatest health risk among the ten TACs. In the San Diego Air Basin, the estimated health risk from diesel PM was 420 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 52 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2003-2005. The health risks of 1,3-butadiene and benzene have been reduced by 72 percent and 77 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 84 percent and 85 percent, respectively.

Carbon tetrachloride data show a 30 percent decrease comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2005 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2003-2005. Both acetaldehyde and formaldehyde show a three percent reduction.

Para-dichlorobenzene data show a 32 percent increase comparing periods between 1991-1993 and 2003-2005. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements. The ARB is exploring options to better assess the *para*-dichlorobenzene concentrations that are below its LOD.

Hexavalent chromium data show a 79 percent decrease comparing periods between 1992-1994 and 2003-2005. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. To better assess hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter.

In addition to routine monitoring, a special study was conducted at a site located in the Logan Heights/Barrio Logan area of San Diego during the period of October 1999 through February 2001. Monitoring included both TACs and criteria air pollutants. The Barrio Logan community is located in a large urban area near major freeways, industrial sources, and neighborhood sources such as gas stations, dry cleaners, and automotive repair facilities. Although not included in this almanac, data from Barrio Logan and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

San Diego Air Basin
Annual Average Concentrations and Health Risks

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.33	1.5	1.22	1.41	1.48	0.64	1.03	1	0.86	1.04	0.84	0.95	0.97	0.89	0.89	1.01
	Health Risk	6	7	6	7	7	3	5	5	4	5	4	5	5	4	4	5
Benzene	Annual Avg	2.25	1.7	1.48	1.16	1.39	0.98	0.76	0.76	0.76	0.86	0.65	0.505	0.491	0.483	0.371	0.404
	Health Risk	208	158	137	107	129	90	71	70	70	79	60	47	45	45	34	37
1,3-Butadiene	Annual Avg	0.333	0.257	0.258	0.312	0.307	0.242	0.208	0.198	0.196	0.22	0.159	0.136	0.12	0.089	0.074	0.073
	Health Risk	125	97	97	117	115	91	78	75	74	83	60	51	45	33	28	27
Carbon Tetrachloride	Annual Avg	0.132	0.127		0.103		0.099	0.077				0.094	0.086	0.092	0.093		
	Health Risk	35	34		27		26	20				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.24	0.19	0.16	0.18	0.11	0.11	0.1	0.1	0.1		0.045	0.05	0.03	0.043
	Health Risk			36	28	23	27	16	16	15	15	15		7	8	5	6
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.15	0.12	0.11	0.13				0.15	0.15	0.15	0.15	0.15
	Health Risk		7	8	8	10	8	7	8				10	10	10	10	10
Formaldehyde	Annual Avg	1.64	1.53	1.26	1.76	2.25	2.13	2.62	2.62	2.27	2.67	2.23	2.59	2.99	2.68	2.19	2.42
	Health Risk	12	11	9	13	17	16	19	19	17	20	16	19	22	20	16	18
Methylene Chloride	Annual Avg	0.59	0.83	1.34	1.13	0.73	0.63	0.59	0.57		0.53	0.76	0.17	0.16	0.16	0.13	0.14
	Health Risk	2	3	5	4	3	2	2	2		2	3	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.282	0.269	0.263	0.2	0.207	0.249	0.147	0.125			0.089	0.061	0.06	0.047	0.037	0.041
	Health Risk	11	11	11	8	8	10	6	5			4	2	2	2	1	2
Diesel PM[3]	*Annual Avg*	*(2.9)*					*(1.9)*					*(1.4)*					
	Health Risk	*(870)*					*(570)*					*(420)*					
Average Basin Risk	w/o Diesel PM	*399*	328	309	319	312	*273*	224	200	180	204	*187*	157	160	147	98	105
	w/ Diesel PM	*(1269)*					*(843)*					*(607)*					

1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-66

Sacramento Valley Air Basin

2006 Emission Inventory by Compound

Acetaldehyde

Approximately 69 percent of the emissions of acetaldehyde are from mobile sources. Another 29 percent are from area-wide sources, including the burning of wood in residential fireplaces and wood stoves.

Sacramento Valley - Acetaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	25	2%	0%
Area-wide Sources	302	29%	3%
On-Road Mobile	275	26%	3%
Gasoline Vehicles	74	7%	1%
Diesel Vehicles	201	19%	2%
Other Mobile	445	42%	4%
Gasoline Fuel	79	8%	1%
Diesel Fuel	320	31%	3%
Other Fuel	45	4%	0%
Natural Sources	0	0%	0%
Total	1047	100%	10%
Total Statewide	10023		

Table 5-67

Benzene

The primary sources of benzene emissions in the Sacramento Valley Air Basin are mobile sources (approximately 86 percent).

Sacramento Valley - Benzene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	141	14%	1%
Area-wide Sources	8	1%	0%
On-Road Mobile	493	47%	4%
Gasoline Vehicles	439	42%	4%
Diesel Vehicles	55	5%	0%
Other Mobile	397	38%	3%
Gasoline Fuel	291	28%	2%
Diesel Fuel	87	8%	1%
Other Fuel	19	2%	0%
Natural Sources	0	0%	0%
Total	1039	100%	9%
Total Statewide	12060		

Table 5-68

1,3-Butadiene

Approximately 51 percent of the emissions of 1,3-butadiene are from mobile sources.

Sacramento Valley - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	42	11%	1%
On-Road Mobile	98	26%	3%
Gasoline Vehicles	93	25%	3%
Diesel Vehicles	5	1%	0%
Other Mobile	92	24%	3%
Gasoline Fuel	67	18%	2%
Diesel Fuel	8	2%	0%
Other Fuel	16	4%	0%
Natural Sources	143	38%	4%
Total	376	100%	10%
Total Statewide	**3589**		

Table 5-69

Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

Sacramento Valley - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.05	100%	3%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.05	100%	3%
Total Statewide	**1.96**		

Table 5-70

Chromium, Hexavalent

Approximately 66 percent of the hexavalent chromium emissions are from other mobile sources.

Sacramento Valley - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.01	31%	1%
Area-wide Sources	< .01	3%	0%
On-Road Mobile	0.01	29%	1%
Gasoline Vehicles	0.01	27%	1%
Diesel Vehicles	< .01	2%	0%
Other Mobile	0.01	37%	1%
Gasoline Fuel	< .01	0%	0%
Diesel Fuel	< .01	0%	0%
Other Fuel	0.01	36%	1%
Natural Sources	0	0%	0%
Total	0.04	100%	3%
Total Statewide	**1.17**		

Table 5-71

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

Sacramento Valley - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	105	100%	7%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	105	100%	7%
Total Statewide	**1469**		

Table 5-72

Formaldehyde

Approximately 76 percent of the formaldehyde emissions are from mobile sources, and 16 percent are from area-wide sources.

Sacramento Valley - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	179	8%	1%
Area-wide Sources	341	16%	1%
On-Road Mobile	645	29%	3%
Gasoline Vehicles	243	11%	1%
Diesel Vehicles	402	18%	2%
Other Mobile	1027	47%	4%
Gasoline Fuel	243	11%	1%
Diesel Fuel	640	29%	3%
Other Fuel	144	7%	1%
Natural Sources	0	0%	0%
Total	2193	100%	9%
Total Statewide	**23154**		

Table 5-73

Methylene Chloride

Approximately 70 percent of the emissions of methylene chloride are from area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products.

Sacramento Valley - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	108	30%	2%
Area-wide Sources	258	70%	4%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	366	100%	6%
Total Statewide	**6527**		

Table 5-74

Perchloroethylene

Approximately 63 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

Sacramento Valley - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	259	63%	5%
Area-wide Sources	152	37%	3%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	410	100%	8%
Total Statewide	**4865**		

Table 5-75

Diesel Particulate Matter

Approximately 93 percent of the emissions of diesel PM are from mobile sources.

Sacramento Valley - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	218	7%	1%
Area-wide Sources	0	0%	0%
On-Road Mobile	1469	46%	3%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	1469	46%	3%
Other Mobile	1472	47%	3%
Gasoline Fuel	0	0%	0%
Diesel Fuel	1472	47%	3%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	3159	100%	7%
Total Statewide	**42326**		

Table 5-76

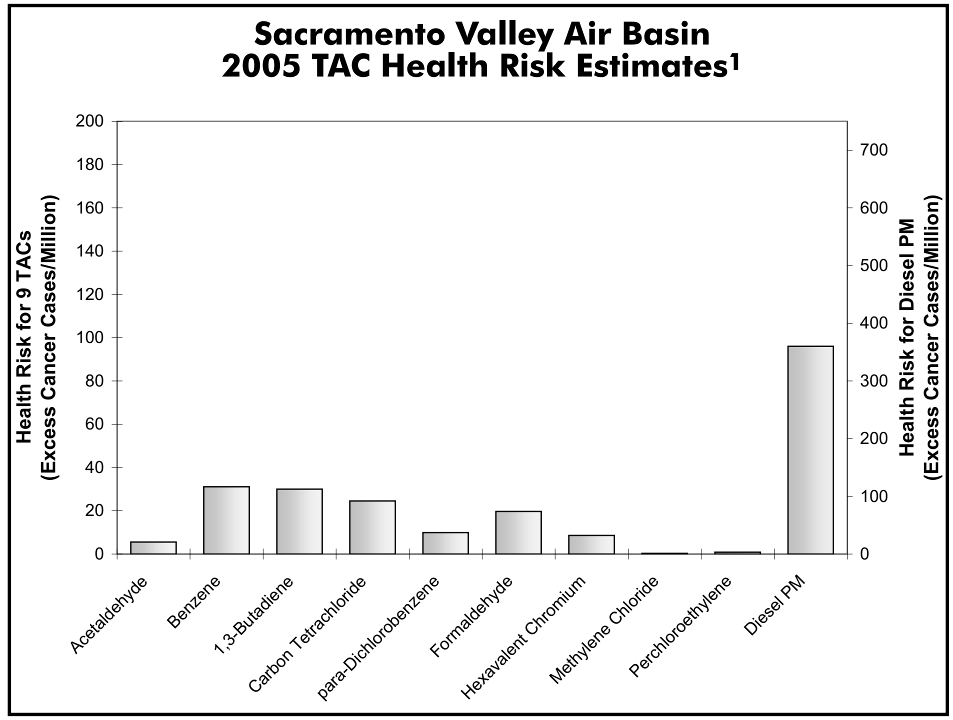
Sacramento Valley Air Basin

Air Quality and Health Risk

Unlike the other air basins described in this almanac, TAC monitoring in the Sacramento Valley Air Basin has not been continuous at any site. TAC concentrations were monitored at the Chico-Salem Street site during 1990 through the middle of 1992. The site was then moved to Chico-Manzanita Avenue. While there was monitoring in the Chico area for 1992, an annual average is not included here because neither site has a full year of data. Similarly, TAC concentrations were monitored at the Citrus Heights site during 1990 through part of 1993, when the site was relocated to Roseville. Again, annual average concentration and associated health risk are not available for the year during which the site was moved because neither site has a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the Sacramento Valley Air Basin, are provided in Table 5-77. Data for individual sites are provided in Appendix C. Figure 5-17 shows individual health risk from the ten TACs for the Sacramento Valley Air Basin. As indicated on the graph, the health risk data reflect the year of 2005 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.



[1] *Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2005.*

Figure 5-17

Diesel PM poses the greatest health risk among the ten TACs. In the Sacramento Valley Air Basin, the estimated health risk from diesel PM was 360 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 52 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2003-2005. The health risks of 1,3-butadiene and benzene have been reduced by 73 percent and 78 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 87 percent and 74 percent, respectively.

Carbon tetrachloride data show a 27 percent decrease comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2005 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2003-2005. Both acetaldehyde and formaldehyde show a nine percent increase.

Para-dichlorobenzene data show a 10 percent increase comparing periods between 1992-1994 and 2003-2005. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements. The ARB is exploring options to better assess the *para*-dichlorobenzene concentrations that are below its LOD.

Hexavalent chromium data show a 60 percent decrease comparing periods between 1992-1994 and 2003-2005. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method is discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter.

Sacramento Valley Air Basin

Annual Average Concentrations and Health Risks

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.29			1.37	1.04	0.39	1.03	1.05	0.92	1.23	0.83	0.74	1.14	1.04	1.09	1.15
	Health Risk	6			7	5	2	5	5	4	6	4	4	6	5	5	6
Benzene	Annual Avg	2.02	1.88	1.35	1	1.02	0.8	0.56	0.55	0.5	0.56	0.45	0.422	0.443	0.406	0.406	0.335
	Health Risk	187	174	125	92	95	74	51	51	47	52	42	39	41	38	38	31
1,3-Butadiene	Annual Avg	0.378	0.332	0.283	0.288	0.221	0.186	0.176	0.16	0.154	0.128	0.119	0.125	0.116	0.094	0.093	0.08
	Health Risk	142	125	106	108	83	70	66	60	58	48	45	47	44	35	35	30
Carbon Tetrachloride	Annual Avg	0.123	0.123		0.109		0.099	0.078				0.094	0.088	0.09	0.093		
	Health Risk	33	32		29		26	21				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.17	0.14	0.13	0.18	0.11	0.1	0.1	0.1	0.1	0.1	0.053	0.05	0.068	0.058
	Health Risk			26	21	19	26	16	15	15	15	15	15	8	8	10	9
para-Dichlorobenzene	Annual Avg			0.11	0.1	0.2	0.14	0.11	0.14			0.1	0.13	0.15	0.15	0.15	0.15
	Health Risk			7	7	14	9	7	10			7	9	10	10	10	10
Formaldehyde	Annual Avg	1.57			1.77	1.75	1.91	2.76	2.92	2.52	3.61	2.51	2.41	3.79	3.53	2.76	2.68
	Health Risk	12			13	13	14	20	22	19	27	18	18	28	26	20	20
Methylene Chloride	Annual Avg	0.65	0.56	0.55	0.98	0.66	0.53	0.54	0.52		0.6	0.57	0.29	0.08	0.08	0.07	0.08
	Health Risk	2	2	2	3	2	2	2	2		2	2	1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.071	0.074	0.063	0.052	0.165	0.049	0.055	0.052			0.058	0.027	0.025	0.018	0.015	0.021
	Health Risk	3	3	3	2	7	2	2	2			2	1	1	<1	<1	<1
Diesel PM[3]	*Annual Avg*	*(2.5)*					*(1.6)*					*(1.2)*					
	Health Risk	*(750)*					*(480)*					*(360)*					
Average Basin Risk	w/o Diesel PM	*385*	336	269	282	238	*225*	190	167	143	150	*160*	157	162	147	118	106
	w/ Diesel PM	*(1153)*					*(705)*					*(520)*					

1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-77

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APPENDIX A

County Level Emissions and Air Quality by Air Basin

Appendix A: *County Level Emissions and Air Quality by Air Basin*

List of Tables

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List of Tables (continued)

List of Tables (continued)

Introduction

This appendix contains criteria pollutant emission trends and forecasts and air quality trend data for each of California's 15 air basins. The emissions data are summarized first, by county or county portion within the air basin. Emissions data are included for the ozone precursors NO_x and ROG, directly emitted PM_{10} and $PM_{2.5}$, and CO. The values represent the total tons of pollutant emissions per average day, listed every five years, from 1975 to 2020. In addition to these data, tables listing the highest emitting facilities for NO_x, ROG, PM_{10}, and $PM_{2.5}$, by air basin, are also included. The lists of high emitting facilities consist of only the top ten facilities exceeding 100 tons per year. The emission totals are the most recent data available from the respective district agencies. Some facilities may have reduced or increased emissions since these data were collected, and these changes will be reflected in subsequent editions of the almanac. Finally, the lists do not include military bases, landfills, or airports.

The air quality trend statistics for each county or county portion are also organized alphabetically, by air basin. The time period covered is 1986 through 2005 for ozone, CO, NO_2, and SO_2, 1988 through 2005 for PM_{10}, and 1999 through 2005 for $PM_{2.5}$. Tables for some areas include blanks, indicating that no monitoring data are available or data are incomplete for a given statistic. In a number of cases, tables are completely blank. These blank tables are included for completeness, but the lack of data is noted on the tables.

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value air quality statistics reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour average CO concentrations in Imperial County in the Salton Sea Air Basin were below the levels of the State and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards were violated. The CO concentrations in this air basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing set of sites in the Salton Sea Air Basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at *www.arb.ca.gov/aqd/netrpt/netrpt.htm*.

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration.

In contrast to the peak and maximum statistics, the counts of days above a standard generally reflect a composite, countywide value (in other words, a count of the total number of days an exceedance occurred at any site in the county.) The exception is PM_{10}, these data reflect the estimated number of exceedances at the one site with the highest total in the air basin.

There are different methods to calculate the estimated number of exceedance days, and the numbers in this appendix may differ from estimates found in other sources. Finally, no estimates are provided for the number of $PM_{2.5}$ exceedance days because California does not have a 24-hour standard for this pollutant.

Great Basin Valleys Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1
Inyo*	7	7	6	6	6	5	5	4	3	3	8	8	8	7	6	6	6	6	6	6
Mono*	3	4	4	4	3	3	3	3	2	1	4	5	5	4	3	3	3	3	3	3
Air Basin Total	10	11	10	10	9	9	9	7	6	4	13	14	13	12	10	9	10	9	9	9

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	1	2	2	2	2	2	2	2	2	3	3	4	4	4	4	4	3	3	3	3
Inyo*	637	637	638	637	636	635	120	39	40	40	68	65	54	48	35	28	25	23	21	21
Mono*	25	28	28	31	32	32	33	33	35	36	37	43	42	33	25	21	18	17	16	15
Air Basin Total	663	667	667	670	669	669	155	74	76	79	107	112	100	86	64	52	47	43	40	39

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	0	0	0	0	0	0	0	0	0	0
Inyo*	85	85	85	85	85	84	16	5	5	6
Mono*	4	4	4	5	5	5	5	5	5	5
Air Basin Total	89	89	89	90	90	89	21	11	11	11

* Values for these counties include emissions from the Owens and Mono Lake Beds.

Table A-1

Great Basin Valleys Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Coso Operating Company (Steam Plant)	Little Lake	165

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-2

Lake County Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	7	8	9	9	9	7	7	7	6	5	12	14	16	15	14	13	12	11	11	11

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	8	9	11	11	11	12	12	12	12	13	102	113	126	120	105	88	80	75	71	69

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	2	3	3	3	4	4	4	4	4	4

Table A-3

Lake County Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-4

Lake Tahoe Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	5	4	4	5	5	4	4	3	3	2	11	8	7	7	6	5	4	4	4	4
Placer	2	1	2	2	2	2	2	2	1	1	6	3	3	3	3	3	2	2	2	2
Air Basin Total	7	5	6	7	7	6	6	5	4	3	17	11	10	9	9	8	7	6	6	6

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	2	2	3	3	3	4	4	4	4	5	131	95	79	64	51	42	33	30	28	28
Placer	1	1	1	1	1	1	2	2	2	2	75	33	33	27	22	17	14	12	11	11
Air Basin Total	3	4	4	5	5	5	5	6	6	6	206	129	112	92	73	59	46	42	40	38

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	1	1	2	2	2	2	2	2	2	2
Placer	0	0	1	1	1	1	1	1	1	1
Air Basin Total	2	2	2	2	2	3	3	3	3	3

A portion of El Dorado County lies within the Mountain Counties Air Basin. Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Table A-5

Lake Tahoe Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-6

Mojave Desert Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	62	41	50	66	57	61	59	56	55	52	66	47	32	29	19	17	15	14	13	12
Los Angeles	19	25	28	38	33	34	34	25	20	17	38	43	43	41	28	24	23	20	21	22
Riverside	11	12	13	25	21	23	21	19	14	11	5	4	5	6	5	4	4	4	4	4
San Bernardino	139	160	157	200	182	190	168	135	119	110	37	44	55	75	62	56	57	52	52	54
Air Basin Total	231	238	248	330	293	308	282	235	208	190	145	138	136	151	115	101	100	90	89	92

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	49	39	35	50	30	32	32	29	29	29	728	479	244	189	128	113	101	89	80	74
Los Angeles	35	38	38	36	30	32	43	35	35	36	112	170	200	232	155	113	91	68	58	53
Riverside	6	6	7	9	8	8	7	7	8	8	18	15	18	27	22	19	15	13	12	11
San Bernardino	95	99	124	117	111	113	115	111	117	122	157	240	318	483	384	313	287	232	208	200
Air Basin Total	185	182	203	211	179	185	197	182	188	195	1015	904	781	932	689	558	494	402	357	338

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	20	14	12	22	9	10	10	9	10	10
Los Angeles	6	7	6	7	6	6	9	6	7	7
Riverside	2	2	2	3	2	2	2	2	2	2
San Bernardino	28	28	42	39	38	36	32	31	32	34
Air Basin Total	55	50	62	71	54	53	53	48	51	52

A portion of Kern County lies within the San Joaquin Valley Air Basin. A portion of Los Angeles County lies within the South Coast Air Basin. Portions of Riverside County lie within the Salton Sea and South Coast Air Basins. A portion of San Bernardino County lies within the South Coast Air Basin.

Table A-7

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Mojave Desert Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Cemex - Black Mountain Quarry	Apple Valley	4754
TXI Riverside Cement Company	Oro Grande	4111
California Portland Cement	Mojave	2975
Mitsubishi Cement 2000	Lucerne Valley	2770
Searles Valley Minerals	Trona	2001
National Cement	Lebec	1300
PG&E Topock Compressor Station	Needles	1140
Lehigh Southwest Cement.	Monolith	888
Southern California Gas	Needles	808
Reliant Energy	Daggett	665

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
PG&E Hinkley Compressor Station	Hinkley	135

Table A-8

Mojave Desert Air Basin
High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Mitsubishi Cement 2000	Lucerne Valley	1468
TXI Riverside Cement Company	Oro Grande	755
Antelope Valley Aggregate	Littlerock	691
California Portland Cement	Mojave	329
National Cement	Lebec	309
Granite Construction	Littlerock	297
U.S. Borax	Boron	292
Searles Valley Minerals	Trona	285
Cemex - Black Mountain Quarry	Apple Valley	277

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Mitsubishi Cement 2000	Lucerne Valley	928
TXI Riverside Cement Company	Oro Grande	344
Antelope Valley Aggregate	Littlerock	257
Searles Valley Minerals	Trona	213
National Cement	Lebec	205
Cemex - Black Mountain Quarry	Apple Valley	183
California Portland Cement	Mojave	171
Lehigh Southwest Cement.	Monolith	127
U.S. Borax	Boron	116
High Desert Power Project	Victorville	105

Table A-8 (continued)

Mountain Counties Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	5	6	6	8	7	6	5	5	5	4	9	10	10	11	9	8	7	7	6	6
Calaveras	5	12	6	7	6	5	5	4	4	3	9	11	12	13	12	12	10	9	8	8
El Dorado	9	12	11	11	10	8	7	6	5	4	17	24	22	21	18	14	13	12	12	12
Mariposa	2	2	2	3	2	2	2	2	1	1	6	6	7	8	7	7	6	6	5	5
Nevada	13	16	17	18	16	13	13	11	9	7	15	19	21	19	16	14	13	12	11	11
Placer	6	7	7	8	8	9	9	9	6	5	5	9	5	6	5	5	5	5	5	5
Plumas	8	9	8	9	8	8	7	6	6	6	11	12	11	11	10	10	9	9	9	9
Sierra	1	1	1	1	1	1	1	1	1	1	3	3	3	4	3	4	4	4	4	5
Tuolumne	11	12	11	14	12	10	10	9	8	8	20	21	21	22	20	18	18	17	17	17
Air Basin Total	60	77	69	78	71	62	60	54	45	38	95	116	112	114	100	90	85	80	77	78

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	7	7	7	8	9	10	9	10	10	11	50	54	55	63	47	39	30	26	23	20
Calaveras	29	10	10	11	11	11	11	12	12	13	70	88	81	86	75	62	54	48	43	40
El Dorado	10	12	13	15	16	16	17	18	19	20	123	160	160	152	126	98	85	76	71	70
Mariposa	6	7	8	8	8	8	8	8	9	9	28	33	34	37	32	26	23	20	19	18
Nevada	12	14	16	19	19	19	20	21	21	22	127	159	172	154	124	104	91	83	77	74
Placer	8	9	9	10	9	8	8	9	9	9	35	37	40	39	35	30	28	27	26	26
Plumas	17	19	20	19	19	19	19	19	20	20	128	135	134	138	128	121	119	117	115	115
Sierra	11	12	12	11	12	12	12	11	12	12	28	28	28	31	28	29	26	26	26	27
Tuolumne	16	18	17	20	19	19	19	19	19	20	192	202	204	217	194	172	164	159	156	155
Air Basin Total	115	108	112	120	122	122	123	127	131	136	779	895	910	917	790	681	618	583	555	545

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9

Mountain Counties Air Basin

County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	2	2	2	3	4	4	3	4	4	4
Calaveras	10	5	4	4	4	4	4	4	4	5
El Dorado	4	5	5	6	6	6	6	6	7	7
Mariposa	1	2	2	2	2	2	2	2	2	2
Nevada	5	6	7	8	8	8	8	8	8	8
Placer	3	3	3	3	3	2	2	2	2	2
Plumas	7	8	8	7	7	7	7	7	7	7
Sierra	2	2	2	2	2	2	2	2	2	2
Tuolumne	10	12	11	12	12	11	11	11	11	12
Air Basin Total	44	45	45	48	48	47	46	47	48	49

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9 (continued)

Mountain Counties Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Sierra Pacific Industries	Quincy	307
Pacific-Ultrapower	Jamestown	190
Collins Pine	Chester	150
Sierra Pacific Industries	Loyalton	129
Sierra Pacific Ind. Standard	Sonora	119

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	263

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	518
Sierra Pacific Ind. Standard	Sonora	103

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	414

Table A-10

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North Central Coast Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	113	124	81	80	64	57	48	43	36	32	97	78	72	64	54	46	40	36	34	33
San Benito	13	12	13	15	15	13	13	12	9	7	13	12	11	11	9	8	8	8	8	7
Santa Cruz	23	25	28	31	27	23	20	18	15	13	48	46	45	38	29	24	19	17	15	14
Air Basin Total	149	161	122	126	105	93	81	73	60	51	158	135	128	114	92	78	67	61	56	54

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	35	39	36	37	36	41	45	50	52	54	690	577	578	504	348	320	280	272	245	230
San Benito	13	13	15	17	14	15	16	17	17	18	98	91	91	83	71	65	64	66	62	61
Santa Cruz	11	12	13	14	13	14	14	14	15	15	297	295	294	257	187	152	119	102	86	76
Air Basin Total	60	64	65	68	63	69	75	81	84	87	1086	964	964	844	606	537	464	440	393	367

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	16	18	14	14	12	15	17	20	20	21
San Benito	5	5	7	7	5	5	6	7	6	6
Santa Cruz	4	4	5	5	5	4	5	5	5	5
Air Basin Total	25	27	25	26	22	25	28	31	31	32

Table A-11

North Central Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Cemex - Cement Plant	Davenport	749
Duke Energy Moss Landing	Moss Landing	171

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Cemex - Cement Plant	Davenport	191
Chemical Lime Company	Salinas	127

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Cemex - Cement Plant	Davenport	115
Duke Energy Moss Landing	Moss Landing	111

Table A-12

North Coast Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
Del Norte	5	5	4	4	3	3	2	2	1	1	10	11	7	7	6	6	5	5	5	5
Humboldt	41	39	32	33	27	26	22	19	17	14	66	41	33	30	24	21	18	17	16	16
Mendocino	24	23	23	23	18	16	15	13	10	8	32	27	20	19	17	15	13	12	11	11
Sonoma	3	8	8	9	9	8	7	6	5	4	9	14	13	15	13	11	9	8	8	8
Trinity	3	3	3	4	3	3	3	3	2	2	7	8	7	7	6	6	5	4	4	4
Air Basin Total	76	79	70	73	60	55	49	43	35	29	124	101	81	79	66	58	50	47	44	43

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
Del Norte	8	9	9	10	10	10	10	11	11	11	134	130	117	114	104	97	93	91	89	88
Humboldt	29	29	27	25	23	22	22	22	23	23	363	313	271	251	190	161	137	131	122	115
Mendocino	19	17	18	20	20	20	21	21	22	23	190	173	158	147	112	90	75	68	61	56
Sonoma	3	4	4	7	5	5	5	5	6	6	32	94	94	90	70	55	45	39	34	31
Trinity	16	19	20	19	20	19	18	17	17	17	75	79	76	76	65	60	56	53	51	49
Air Basin Total	75	78	78	81	78	77	76	77	78	80	795	789	716	677	541	463	406	383	357	339

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
Del Norte	5	6	5	6	6	6	6	6	6	6
Humboldt	16	16	14	12	10	9	9	9	9	9
Mendocino	9	6	6	6	6	6	6	6	6	6
Sonoma	1	2	2	4	2	2	2	2	2	2
Trinity	4	5	5	5	5	5	4	4	4	4
Air Basin Total	36	34	32	32	28	27	27	27	27	27

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Table A-13

North Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
PG&E-Humboldt Bay Plant	Eureka	435
Samoa-Pacific Cellulose	Samoa	365
The Pacific Lumber Company	Scotia	321
Fairhaven Power Company	Fairhaven	280
Humboldt Flakeboard Panels	Arcata	140

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Samoa-Pacific Cellulose	Samoa	153
The Pacific Lumber Company	Scotia	116

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Samoa-Pacific Cellulose	Samoa	143
Fairhaven Power Company	Fairhaven	109

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Fairhaven Power Company	Fairhaven	102
Samoa-Pacific Cellulose	Samoa	102

Table A-14

Northeast Plateau Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	10	9	9	9	8	8	7	6	5	5	10	11	11	11	9	8	8	7	7	7
Modoc	7	6	5	5	5	5	4	4	3	3	6	6	6	5	5	4	4	4	4	4
Siskiyou	21	22	20	23	21	19	19	16	13	10	28	28	26	26	23	21	20	19	18	17
Air Basin Total	37	37	34	37	34	32	30	25	21	18	44	45	42	42	37	33	31	30	28	27

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	19	19	20	21	20	23	22	22	22	23	61	72	70	66	59	52	44	41	38	36
Modoc	18	18	19	19	18	18	18	17	17	17	30	32	29	27	22	18	16	14	13	12
Siskiyou	33	35	34	34	34	33	33	33	33	34	369	353	332	329	298	271	259	253	246	242
Air Basin Total	69	72	73	74	72	74	73	72	73	74	460	457	430	422	380	341	319	307	297	289

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	5	5	5	5	5	5	5	5	5	5
Modoc	4	4	4	4	3	3	3	3	3	3
Siskiyou	19	20	18	19	18	18	18	17	17	17
Air Basin Total	28	28	27	28	26	26	25	25	25	25

Table A-15

Northeast Plateau Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
H.L. Power Company	Wende	150

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-16

Outer Continental Shelf

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	1	1	2	2	3	3	4	5	6	8	0	0	0	0	0	0	0	0	0	0
Humboldt	5	5	6	7	8	10	12	14	17	21	0	0	0	0	0	0	0	0	1	1
Los Angeles	21	21	21	24	26	29	29	30	32	37	2	2	2	2	2	2	2	2	2	2
Marin	1	1	1	2	2	3	4	4	5	7	0	0	0	0	0	0	0	0	0	0
Mendocino	4	4	5	6	7	8	10	12	14	18	0	0	0	0	0	0	0	0	0	1
Monterey	7	7	8	9	11	14	16	19	23	28	0	0	0	1	1	1	1	1	1	1
Orange	2	2	2	2	3	4	4	6	8	12	0	0	0	0	0	0	0	0	0	0
San Diego	14	14	14	14	15	17	18	21	26	34	1	1	1	1	1	1	1	1	1	1
San Francisco	2	2	3	3	4	6	7	8	10	13	0	0	0	0	0	0	0	0	0	0
San Luis Obispo	4	5	5	6	8	10	12	14	18	22	0	0	0	0	0	0	0	0	1	1
San Mateo	7	7	8	10	14	18	22	27	34	43	0	0	0	0	0	1	1	1	1	1
Santa Barbara	18	20	26	33	42	54	65	79	98	120	1	1	4	5	3	3	4	4	4	5
Santa Cruz	1	1	1	2	2	3	4	5	6	8	0	0	0	0	0	0	0	0	0	0
Sonoma	3	3	3	3	4	4	5	6	7	9	0	0	0	0	0	0	0	0	0	0
Ventura	6	6	7	9	11	13	15	17	20	25	0	0	1	2	2	1	1	1	1	1
Air Basin Total	96	99	110	133	159	195	226	268	325	403	5	6	10	11	10	9	10	11	12	15

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
Humboldt	0	0	0	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2
Los Angeles	1	1	1	2	2	2	2	2	3	3	4	4	4	4	4	4	4	5	5	6
Marin	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Mendocino	0	0	0	0	1	1	1	1	1	2	0	0	1	1	1	1	1	1	1	2
Monterey	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	2	2	2	2	3
Orange	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1
San Diego	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	4	4	4	4	5
San Francisco	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	1	1	1
San Luis Obispo	0	0	0	0	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	2
San Mateo	1	1	1	1	1	1	2	2	3	4	1	1	1	1	1	1	2	2	3	4
Santa Barbara	1	2	2	3	3	4	5	7	8	11	1	2	3	3	4	5	6	7	9	11
Santa Cruz	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
Sonoma	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1
Ventura	0	0	1	1	1	1	1	1	2	2	1	2	2	2	2	2	3	3	3	4
Air Basin Total	7	7	8	10	12	15	18	22	28	36	14	15	16	17	20	23	26	30	36	43

Table A-17

Outer Continental Shelf

County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	0	0	0	0	0	0	0	0	1	1
Humboldt	0	0	0	0	1	1	1	1	1	2
Los Angeles	1	1	1	1	2	2	2	2	2	3
Marin	0	0	0	0	0	0	0	0	0	1
Mendocino	0	0	0	0	1	1	1	1	1	2
Monterey	0	0	1	1	1	1	1	1	2	2
Orange	0	0	0	0	0	0	0	1	1	1
San Diego	1	1	1	1	1	1	1	2	2	3
San Francisco	0	0	0	0	0	0	1	1	1	1
San Luis Obispo	0	0	0	0	1	1	1	1	1	2
San Mateo	1	1	1	1	1	1	2	2	3	4
Santa Barbara	1	2	2	2	3	4	5	7	8	10
Santa Cruz	0	0	0	0	0	0	0	0	1	1
Sonoma	0	0	0	0	0	0	0	0	1	1
Ventura	0	0	1	1	1	1	1	1	2	2
Air Basin Total	7	7	8	10	11	14	17	22	27	35

Table A-17

Outer Continental Shelf
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Point Arguello Platform Harvest	Outer Continental Shelf	151
Exxon - SYU Project (Offshore Platforms)	Outer Continental Shelf	138

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Exxon - Syu Project (Offshore Platforms)	Outer Continental Shelf	141
South County/Dos Cuadras (Oil Production)	Outer Continental Shelf	138

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-18

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Sacramento Valley Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	31	33	32	34	32	28	26	23	18	14	42	42	40	39	32	26	22	20	18	17
Colusa	11	12	11	16	16	14	14	12	11	9	12	10	12	11	9	8	7	7	7	7
Glenn	16	15	13	15	14	12	12	10	9	8	15	15	14	12	12	10	10	9	9	9
Placer	20	23	24	26	26	25	24	18	15	14	36	33	34	31	29	23	21	17	17	17
Sacramento	115	117	122	129	115	97	84	69	54	42	217	197	177	142	113	84	67	58	53	51
Shasta	37	39	37	44	39	39	37	34	28	24	38	41	39	38	31	28	25	23	21	20
Solano	17	22	22	27	26	23	21	19	14	11	16	22	21	21	17	14	11	10	9	8
Sutter	22	22	20	24	23	20	19	19	15	12	19	18	18	16	14	12	10	10	10	10
Tehama	19	21	18	19	18	18	18	16	12	10	16	17	16	15	12	10	9	9	8	7
Yolo	35	35	33	37	36	33	28	23	18	15	37	34	30	24	21	17	14	12	12	11
Yuba	11	14	11	10	10	9	8	7	6	5	14	17	14	13	11	10	9	8	8	7
Air Basin Total	335	351	342	382	354	318	290	250	200	164	461	447	415	362	301	243	207	183	170	165

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	28	29	30	32	28	27	27	28	28	28	265	275	265	255	196	153	124	106	89	81
Colusa	15	16	16	16	16	17	17	17	17	18	54	49	46	43	35	29	25	23	22	21
Glenn	16	16	15	16	15	15	15	16	16	16	95	93	86	75	63	55	50	47	45	43
Placer	8	9	11	13	13	14	16	17	18	19	216	251	238	212	176	155	132	105	98	95
Sacramento	32	36	40	43	40	42	44	46	48	49	1487	1384	1272	1058	753	542	393	312	260	224
Shasta	30	28	29	32	31	31	33	33	34	36	320	325	321	327	267	233	218	203	193	189
Solano	9	10	10	10	10	9	9	9	9	9	129	203	187	176	119	91	69	53	44	39
Sutter	14	15	14	14	14	15	14	15	15	15	105	101	95	89	69	55	44	40	35	31
Tehama	14	15	16	15	15	15	15	15	16	16	104	107	95	97	72	57	48	41	36	32
Yolo	24	24	25	28	27	29	28	28	28	28	246	225	209	163	121	98	74	58	49	44
Yuba	9	8	8	8	8	8	8	8	8	9	96	101	84	79	65	53	46	42	38	37
Air Basin Total	199	206	213	226	215	222	227	232	237	242	3116	3113	2899	2573	1935	1520	1223	1032	908	835

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19

Sacramento Valley Air Basin
County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	10	11	11	13	10	10	9	9	9	9
Colusa	4	4	4	4	4	4	4	4	4	4
Glenn	6	6	6	6	6	6	6	6	6	6
Placer	4	4	5	6	6	6	6	7	7	7
Sacramento	11	12	13	15	13	13	14	14	14	15
Shasta	16	13	13	15	13	13	14	14	14	14
Solano	3	3	3	3	3	3	3	3	3	3
Sutter	4	5	4	4	4	5	4	4	4	4
Tehama	4	5	5	5	5	4	5	5	5	5
Yolo	7	6	6	7	7	7	6	6	6	6
Yuba	3	3	3	3	3	3	2	3	3	3
Air Basin Total	73	71	73	81	73	74	73	74	75	76

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19 (continued)

Sacramento Valley Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Lehigh Southwest Cement	Redding	612
Wheelabrator Shasta	Anderson	568
Burney Forest Products	Burney	209
PG&E Delevan Compressor Station	Colusa	202
Sierra Pacific Ind. - Burney	Burney	155
Sierra Pacific Industries	Lincoln	148
Calpine Greenleaf I	Yuba City	144
Pacific Oroville Power	Oroville	124
Johns-Manville (Insulation)	Willows	123
Wadham Energy	Williams	121

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Premier Industries	Dixon	163
Johns-Manville (Insulation)	Willows	162

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Johns-Manville (Insulation)	Willows	249
Lehigh Southwest Cement	Redding	134
Wheelabrator Shasta	Anderson	129

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Johns-Manville (Insulation)	Willows	220
Wheelabrator Shasta	Anderson	120
Lehigh Southwest Cement	Redding	101

Table A-20

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Salton Sea Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	44	39	35	39	43	40	38	35	31	28	46	45	36	37	37	33	33	32	32	32
Riverside	40	43	48	60	55	51	53	39	28	21	40	42	44	42	35	24	20	17	16	16
Air Basin Total	84	82	83	99	97	91	91	74	59	49	86	86	81	79	72	57	52	49	48	48

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	256	259	257	250	232	231	232	235	237	240	230	220	190	190	156	122	103	91	83	79
Riverside	12	13	14	20	19	19	17	20	22	24	278	274	289	307	232	128	98	77	66	61
Air Basin Total	268	272	271	270	251	250	250	255	259	263	508	494	479	496	388	250	201	168	149	140

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	44	44	43	44	42	41	40	41	41	41
Riverside	5	4	5	6	5	5	5	4	4	4
Air Basin Total	50	49	48	50	47	46	45	45	45	45

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

Table A-21

Salton Sea Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Imperial Irrigation District	El Centro	296
Holly Sugar	Brawley	210

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
U.S. Gypsum Plaster City	Plaster City	156

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-22

San Diego Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	284	268	271	305	268	232	193	160	129	111	448	436	401	333	261	213	172	151	141	138

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	69	77	86	104	99	107	116	121	127	134	3389	3066	2897	2517	1787	1333	955	753	630	564

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	27	28	25	30	29	31	31	32	33	35

Table A-23

San Diego Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I Encina Power Plant	Carlsbad	224
Duke Energy South Bay Power Plant	Chula Vista	121

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
National Steel & Shipbuilding	San Diego	225

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I Encina Power Plant	Carlsbad	169
Duke Energy South Bay Power Plant	Chula Vista	136

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I Encina Power Plant	Carlsbad	169
Duke Energy South Bay Power Plant	Chula Vista	136

Table A-24

San Francisco Bay Area Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	198	191	190	186	164	151	130	114	90	77	304	270	221	166	136	108	81	71	64	61
Contra Costa	254	235	186	170	149	124	87	76	65	59	249	250	189	127	112	98	66	60	57	56
Marin	26	26	24	24	21	18	14	12	9	7	55	49	41	32	27	22	17	14	13	12
Napa	17	16	17	16	16	14	12	10	8	6	31	28	24	19	18	18	12	10	9	8
San Francisco	88	92	75	74	66	58	47	39	34	30	153	128	100	71	59	47	36	30	28	26
San Mateo	91	88	82	79	74	61	49	42	38	35	163	146	118	84	72	52	39	32	30	29
Santa Clara	192	185	166	165	152	129	102	84	67	55	345	317	243	177	147	117	86	72	66	62
Solano	39	46	41	42	38	34	29	26	22	20	58	64	52	41	33	27	20	19	18	17
Sonoma	39	40	40	41	39	33	27	21	16	12	73	68	59	48	42	35	26	22	19	18
Air Basin Total	943	918	821	797	720	622	496	423	348	301	1430	1320	1047	764	646	525	382	330	302	290

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	37	36	42	42	40	46	45	47	49	51	2014	1813	1539	1156	815	619	427	345	287	258
Contra Costa	36	37	33	31	30	33	32	34	36	38	1305	1177	1041	800	600	453	310	249	208	188
Marin	6	7	7	8	8	9	9	10	10	11	384	351	291	228	165	129	90	70	59	53
Napa	7	7	8	8	8	9	8	9	9	10	194	180	160	136	117	98	71	58	49	44
San Francisco	12	13	14	13	14	18	16	17	18	19	902	823	680	488	349	264	182	145	127	116
San Mateo	14	14	17	17	17	21	20	21	23	24	1199	1104	883	648	483	329	221	167	145	136
Santa Clara	40	39	44	45	44	52	50	52	55	57	2275	2089	1701	1281	943	723	496	391	329	295
Solano	12	13	14	14	12	13	13	13	14	14	301	307	275	223	153	121	88	71	59	53
Sonoma	16	16	18	17	16	18	17	17	18	18	500	490	441	365	291	226	156	121	98	86
Air Basin Total	181	182	195	194	189	218	210	220	230	241	9075	8334	7011	5325	3917	2961	2041	1617	1363	1230

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.

Table A-25

San Francisco Bay Area Air Basin

County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	15	15	17	17	16	17	17	17	17	17
Contra Costa	21	21	16	15	14	14	14	14	15	15
Marin	3	3	3	4	4	4	4	4	4	4
Napa	3	3	3	3	4	4	4	4	4	4
San Francisco	6	6	6	6	8	7	7	7	7	8
San Mateo	5	5	6	7	7	8	7	8	8	8
Santa Clara	15	14	15	17	16	17	16	17	17	18
Solano	5	5	5	6	5	5	5	4	4	5
Sonoma	7	7	8	9	8	8	8	8	8	8
Air Basin Total	81	79	79	83	81	84	81	83	84	87

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.

Table A-25 (continued)

San Francisco Bay Area Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Valero Refining Company	Benicia	1963
Shell Martinez Refinery	Martinez	1782
Tesoro Refining And Marketing	Martinez	1511
Hanson Permanente Cement	Cupertino	1074
Chevron Products Company	Richmond	1070
ConocoPhillips Refining Company	Rodeo	584
Owens-Brockway Glass Container	Oakland	518
ConocoPhillips - San Francisco	Rodeo	328
Mirant Potrero	San Francisco	289
PG&E Hunters Point Power	San Francisco	216

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Tesoro Refining And Marketing	Martinez	1555
Chevron Products Company	Richmond	1311
Shell Martinez Refinery	Martinez	1235
New United Motor Manufacturing	Fremont	556
Valero Refining Company	Benicia	494
ConocoPhillips - San Francisco	Rodeo	464
Ball Metal Beverage Container	Fairfield	166

Table A-26

San Francisco Bay Area Air Basin
High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Shell Martinez Refinery	Martinez	373
Chevron Products Company	Richmond	240
Valero Refining Company	Benicia	193
Tesoro Refining And Marketing	Martinez	127

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Shell Martinez Refinery	Martinez	360
Chevron Products Company	Richmond	232
Valero Refining Company	Benicia	179
Tesoro Refining And Marketing	Martinez	115

Table A-26 (continued)

San Joaquin Valley Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	132	149	160	169	156	131	117	104	80	65	172	157	139	129	112	97	87	81	78	78
Kern	229	331	321	277	216	183	167	148	118	94	585	705	591	192	109	98	82	76	71	68
Kings	44	40	43	42	39	36	31	30	24	19	25	24	24	20	22	19	19	18	18	19
Madera	31	38	34	36	35	35	34	33	28	25	43	26	24	24	22	20	19	18	17	17
Merced	48	53	50	62	57	56	56	48	36	27	49	46	40	43	37	34	31	29	28	29
San Joaquin	110	108	113	129	124	115	106	92	74	62	94	89	87	83	72	61	51	46	43	42
Stanislaus	51	59	54	71	65	60	56	48	38	31	66	64	61	65	57	52	45	41	40	40
Tulare	55	61	57	59	58	55	49	44	33	26	68	65	62	60	56	51	48	48	47	49
Air Basin Total	700	839	831	844	750	672	616	549	431	349	1102	1176	1026	617	486	432	381	357	344	343

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	81	76	78	92	90	89	80	79	78	80	893	844	791	740	598	492	388	330	289	266
Kern	56	55	55	57	54	54	49	48	48	49	683	763	646	563	426	346	274	227	195	176
Kings	23	21	22	28	27	28	23	23	23	23	138	127	109	98	91	75	66	58	51	47
Madera	18	20	18	21	21	20	18	18	19	19	173	183	174	156	124	111	94	86	75	70
Merced	29	29	30	38	36	36	30	30	30	30	323	304	255	261	196	158	122	98	79	69
San Joaquin	29	28	30	39	38	39	33	33	33	34	593	566	572	523	425	336	258	213	183	167
Stanislaus	24	25	26	35	34	34	28	28	28	28	365	343	323	348	268	215	157	123	101	88
Tulare	27	28	30	37	37	39	35	35	35	37	396	384	372	332	276	233	180	151	128	117
Air Basin Total	287	284	287	346	336	339	297	293	294	300	3564	3514	3241	3020	2404	1966	1538	1285	1101	1001

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27

San Joaquin Valley Air Basin
County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	38	31	31	33	30	30	29	27	26	27
Kern	31	30	27	24	21	21	19	18	17	17
Kings	8	7	7	8	7	8	7	7	7	7
Madera	8	9	7	8	8	8	7	7	7	7
Merced	9	9	9	12	10	10	9	9	8	8
San Joaquin	13	12	12	14	14	13	12	11	11	11
Stanislaus	9	9	9	12	11	11	10	9	9	9
Tulare	10	11	12	14	13	14	14	14	14	14
Air Basin Total	126	118	114	123	114	114	106	102	99	99

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27 (continued)

San Joaquin Valley Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Aera Energy	Kern County	966
Guardian Industries (Glass)	Kingsburg	756
Kern River Cogeneration	Kern County	511
Saint-Gobain Containers	Madera	485
Sycamore Cogeneration	Kern County	447
Chevron USA	Kern County	436
Owens-Brockway Glass Container	Tracy	422
PPG Industries	Fresno	408
Occidental Of Elk Hills (Natural Gas)	Tupman	366
Covanta Stanislaus (Cogeneration)	Crows Landing	340

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Pactiv Corporation (Packaging)	Visalia	828
Crimson Resource Management	Taft	445
Occidental Of Elk Hills (Natural Gas)	Tupman	316
J G Boswell Company Oil Mill	Corcoran	260
MB Technology	Fresno	206
Pilkington North America (Glass)	Lathrop	190
Equilon Enterprises	Bakersfield	188
Pactiv Corporation (Packaging)	Bakersfield	187
Silgan Containers	Riverbank	144
Chevron USA	Kern County	104

Table A-28

San Joaquin Valley Air Basin
High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Pilkington North America (Glass)	Lathrop	220
Chevron USA 1141	Kern County	184
Chevron USA 1128	Kern County	162

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Pilkington North America (Glass)	Lathrop	199
Chevron USA 1141	Kern County	184
Chevron USA 1128	Kern County	162

Table A-28 (continued)

South Central Coast Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	66	63	46	46	31	30	23	20	15	13	47	50	51	42	34	29	25	23	21	21
Santa Barbara	54	64	61	64	54	47	41	35	29	24	83	75	76	70	53	42	38	34	32	32
Ventura	97	106	93	89	73	65	55	42	34	28	109	117	106	92	74	63	52	46	43	42
Air Basin Total	217	233	200	199	158	143	120	97	78	64	239	241	233	204	161	134	115	103	97	95

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	24	26	26	27	27	28	29	29	30	31	311	319	326	292	214	186	146	127	111	102
Santa Barbara	19	21	22	23	22	23	23	24	25	25	555	520	507	452	313	236	189	163	138	124
Ventura	22	19	20	23	22	24	25	26	27	28	581	648	640	587	436	334	246	197	171	157
Air Basin Total	64	66	68	73	71	75	77	79	82	84	1447	1488	1472	1331	963	756	581	487	420	383

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	10	10	9	9	9	9	9	9	9	9
Santa Barbara	9	10	10	10	9	9	9	9	9	10
Ventura	11	9	8	9	8	8	8	8	9	9
Air Basin Total	30	29	26	28	26	27	26	27	27	27

Table A-29

South Central Coast Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Celite Corporation (Minerals)	Lompoc	437
BreitBurn Energy-Orcutt Hill (Oil Production)	Orcutt	213
ConocoPhillips Santa Maria	Arroyo Grande	178
Cat Canyon	Santa Maria	101

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Aera Energy	Ventura	167
Cat Canyon	Santa Maria	120

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Celite Corporation (Minerals)	Lompoc	142

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-30

South Coast Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	1234	1067	1072	1021	859	735	613	468	374	312	1984	1578	1501	1164	859	663	432	324	288	271
Orange	252	246	266	267	230	203	166	127	98	77	472	436	437	346	263	212	140	115	106	101
Riverside	80	87	92	127	117	116	110	77	60	47	122	119	126	131	109	95	74	60	58	58
San Bernardino	128	132	134	146	129	126	111	82	68	57	171	179	183	160	130	110	83	69	66	66
Air Basin Total	1693	1532	1564	1561	1335	1180	999	755	600	493	2748	2312	2246	1801	1361	1080	729	569	518	496

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	147	144	156	204	191	185	161	144	144	145	12001	9230	8866	6968	4904	3476	2478	1689	1398	1226
Orange	30	37	42	64	61	64	57	54	55	56	2656	2397	2414	2014	1494	1074	780	613	522	467
Riverside	17	22	25	48	50	53	51	48	55	60	746	756	793	827	653	539	433	316	262	233
San Bernardino	30	30	31	42	43	46	44	40	43	45	1140	1221	1075	940	727	559	438	332	290	271
Air Basin Total	224	233	254	357	346	348	313	286	296	306	16544	13605	13148	10750	7778	5648	4129	2950	2472	2198

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	85	74	74	80	67	66	63	57	56	56
Orange	15	16	17	21	18	19	19	18	18	18
Riverside	7	9	9	14	13	14	14	13	14	14
San Bernardino	18	16	14	16	15	16	16	15	16	16
Air Basin Total	126	115	114	131	114	115	112	103	103	105

A portion of Los Angeles County lies within the Mojave Desert Air Basin. Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins. A portion of San Bernardino County Lies within the Mojave Desert Air Basin.

Table A-31

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South Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	1088
California Portland Cement	Colton	937
BP West Coast Products Carson Refinery	Carson	893
ExxonMobil Oil Corporation	Torrance	770
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	729
ConocoPhillips Company	Wilmington	638
ConocoPhillips Company	Carson	368
BP West Coast Products Wilmington	Wilmington	314
SERRF Project	Long Beach	302
Ultramar (Refining)	Wilmington	292

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	775
BP West Coast Products Carson Refinery	Carson	745
ExxonMobil Oil Corporation	Torrance	713
Lasco Bathware (Plumbing Fixtures)	Anaheim	288
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	251
Dart Container Corp Of California	Corona	205
ConocoPhillips Company	Wilmington	187
Anheuser-Busch (Brewery)	Van Nuys	162
ConocoPhillips Company	Carson	128
Kinder Morgan Liquids Terminals	Carson	121

Table A-32

South Coast Air Basin
High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	356
BP West Coast Products Carson Refinery	Carson	298
ExxonMobil Oil Corporation	Torrance	196
ConocoPhillips Company	Wilmington	129
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	127

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	303
BP West Coast Products Carson Refinery	Carson	284
ExxonMobil Oil Corporation	Torrance	187
ConocoPhillips Company	Wilmington	122

Table A-32 (continued)

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Air Quality

This section contains air quality trend data for each county in California's 15 air basins, organized alphabetically, by air basin. It is important to note that some counties are located in more than one air basin. For these counties, the air quality data are for that portion of the county located in each air basin. The time period covered is 1986 through 2005 for ozone, CO, NO_2, and $SO_{2;}$ 1988 through 2005 for PM_{10}; and 1999 through 2005 for $PM_{2.5}$. In some areas, no monitoring data are available or the data are incomplete. Tables for these areas are included, but the lack of data is noted on the tables.

Consistent with last years almanac, this section provides information on the 4th highest 1-hour ozone concentration in three years, and the average 4th highest 8-hour concentration in three years. In some cases, these statistics may be the same as the national 1-hour and 8-hour ozone design values. However, since this does not consider data completeness, they are not considered valid for design value purposes.

Consistent with last year's almanac, is the reporting of both State and national statistics for PM_{10} and $PM_{2.5}$. State and national values may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved for assessing compliance with each standard, and 3) the State PM and national $PM_{2.5}$ standards use local conditions while the national PM_{10} standard uses standard conditions for data reporting.

Additional information about the data in the following tables can be found in the *Introduction* section to this Appendix and in the *Interpreting the Emissions and Air Quality Statistics* section in Chapter 1.

Great Basin Valleys Air Basin

County: Alpine

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
Max. Annual Average (State)																				
Max. Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-33

Great Basin Valleys Air Basin

County: Inyo

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)							0.073	0.076	0.090	0.090	0.089	0.085	0.089	0.089	0.087	0.086	0.088	0.088	0.085	0.089
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)								0.060	0.068	0.064	0.076	0.074	0.079	0.079	0.080	0.079	0.081	0.081	0.080	0.081
Peak 1-Hour Indicator (State)							0.082	0.082	0.098	0.096	0.094	0.088	0.092	0.089	0.089	0.089	0.091	0.091	0.090	0.092
4th High 1-Hr. in 3 Yrs2							0.080	0.080	0.098	0.098	0.095	0.087	0.087	0.089	0.090	0.092	0.092	0.092	0.088	0.090
Max. 8-Hr. Concentration						0.041	0.076	0.077	0.089	0.073	0.082	0.080	0.085	0.089	0.080	0.089	0.088	0.084	0.081	0.101
Maximum 1-Hr. Concentration						0.050	0.080	0.080	0.101	0.085	0.095	0.084	0.092	0.094	0.090	0.095	0.100	0.089	0.086	0.105
Days Above State 8-Hr. Std.						0	2	4	41	2	18	14	30	32	27	30	34	31	28	47
Days Above Nat. 8-Hr. Std.						0	0	0	3	0	0	0	1	1	0	2	2	0	0	4
Days Above State 1-Hr. Std.						0	0	0	2	0	1	0	0	0	0	1	2	0	0	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			119	227	866	150	64	254	388	692	309	402	1022	2708	9967	3457	7401	15641	4797	738
Max. 24-Hr. Concentration (Nat)			394	1861	866	181	526	578	1381	3929	2383	2229	1116	2901	2638	3912	7915	16619	5225	879
Max. Annual Average (State)				27.1	29.4	23.2	18.1	28.7	22.4	32.3	21.5	14.6	57.8	13.6	115.4	63.1	159.3	130.4	68.3	30.1
Max. Annual Average (Nat)			36.1	91.0	48.3	27.0	37.3	42.5	43.6	69.9	47.3	36.8	53.8	55.2	98.8	60.4	134.1	147.3	101.0	32.3
Calc Days Above State 24-Hr Std				36	18	12	12	36	16	23	7	6	80	0	58	41	93	44	35	36
Calc Days Above Nat 24-Hr Std			13	27	6	0	19	24	4	23	20	17	22	5	32	34	39	31	23	14

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														40.7	68.0	76.0	68.0	44.0	81.0	22.0
Max. 24-Hr. Concentration (Nat)														40.7	68.0	76.0	68.0	44.0	81.0	22.0
98th Percentile of 24-Hr Conc.															67.0	23.0	64.0	8.0		
Annual Average (State)																5.5				
Avg. of Qtrly. Means (Nat)																5.5	8.4			

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator							3.5	3.2	3.1	2.9										
Max. 1-Hr. Concentration						6.0	11.0	5.0	5.0	4.0										
Max. 8-Hr. Concentration						3.6	3.8	2.8	2.8	2.0										
Days Above State 8-Hr. Std.						0	0	0	0	0										
Days Above Nat. 8-Hr. Std.						0	0	0	0	0										

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-34

Great Basin Valleys Air Basin

County: Mono

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.100	0.098	0.096	0.094	0.096	0.091	0.100	0.097	0.096	0.089	0.089	0.084	0.081			0.095	0.095			
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.082	0.084	0.086	0.081	0.081	0.076	0.081	0.078	0.082	0.079	0.079	0.077	0.073							
Peak 1-Hour Indicator (State)	0.100	0.100	0.100	0.100	0.099	0.097	0.115	0.110	0.108	0.097	0.100	0.097	0.097			0.106	0.106			
4th High 1-Hr. in 3 Yrs2	0.100	0.100	0.100	0.100	0.100	0.090	0.140	0.140	0.130	0.100	0.100	0.092	0.091			0.100	0.100			
Max. 8-Hr. Concentration	0.093	0.091	0.098	0.077	0.091	0.073	0.103	0.077	0.092	0.101	0.090	0.078	0.073			0.095	0.063			
Maximum 1-Hr. Concentration	0.100	0.100	0.100	0.080	0.100	0.090	0.150	0.090	0.120	0.110	0.090	0.092	0.079			0.099	0.071			
Days Above State 8-Hr. Std.	50	40	36	6	20	3	33	15	24	7	17	13	2			17	0			
Days Above Nat. 8-Hr. Std.	13	2	6	0	3	0	9	0	3	2	1	0	0			2	0			
Days Above State 1-Hr. Std.	5	4	3	0	2	0	5	0	2	2	0	0	0			4	0			

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			166	163	161	134	493	981	92	122	158	112	88	109	8817	3643	5291	4774	803	1720
Max. 24-Hr. Concentration (Nat)			166	163	161	134	493	981	92	122	158	112	106	133	10466	4482	6505	5745	987	2108
Max. Annual Average (State)					11.6		37.0	34.2	29.8	26.0		26.4		10.0	116.8		62.3	10.5	19.6	19.5
Max. Annual Average (Nat)			28.6	34.6	39.6	28.6	36.3	59.4	29.9	26.0	22.1	26.5	20.8	12.6	121.2	34.6	81.7	97.9	62.4	83.5
Calc Days Above State 24-Hr Std					13		83	62	64	37		36		0	18		22	0	11	27
Calc Days Above Nat 24-Hr Std				7	12	0	9	6	0	0	0	0	0	0	15	0	14	26	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)															31.0	41.0		34.0	27.0	27.0
Max. 24-Hr. Concentration (Nat)															31.0	41.0		34.0	27.0	27.0
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	7.2	7.0	5.9	5.8	5.7	5.6		5.0	4.7	4.6	4.0	4.0	3.9		2.9	2.5	2.5			
Max. 1-Hr. Concentration	11.0	9.0	13.0	12.0	10.0	11.0	8.0	13.0	9.0	10.0	6.0	8.2	6.7		4.2	15.4	3.8			
Max. 8-Hr. Concentration	6.0	6.3	5.0	5.4	4.4	5.0	4.4	4.5	5.4	5.4	3.0	3.4	3.0		2.5	2.5	1.8			
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0			
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0			

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-35

Lake County Air Basin

County: Lake

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.075	0.077	0.078	0.074	0.062	0.066	0.066	0.068	0.074	0.074	0.074	0.064	0.066	0.078	0.076	0.074	0.075	0.073	0.073	0.067
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.064	0.065	0.065	0.058	0.054	0.055	0.055	0.057	0.059	0.061	0.060	0.058	0.057	0.061	0.062	0.064	0.064	0.064	0.065	0.061
Peak 1-Hour Indicator (State)	0.082	0.081	0.080	0.083	0.074	0.075	0.077	0.077	0.083	0.082	0.082	0.073	0.075	0.087	0.083	0.080	0.081	0.080	0.081	0.076
4th High 1-Hr. in 3 Yrs2	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070
Max. 8-Hr. Concentration	0.080	0.080	0.061	0.053	0.063	0.066	0.057	0.072	0.075	0.063	0.070	0.065	0.076	0.072	0.073	0.065	0.077	0.065	0.066	0.066
Maximum 1-Hr. Concentration	0.080	0.090	0.070	0.060	0.090	0.080	0.080	0.080	0.090	0.070	0.090	0.080	0.080	0.090	0.080	0.070	0.090	0.080	0.080	0.070
Days Above State 8-Hr. Std.	4	3	0	0	0	0	0	1	2	0	0	0	1	3	1	0	5	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				29	30	31	22	30	21	30	26	18	34	40	21	23	85	32	22	20
Max. 24-Hr. Concentration (Nat)				29	30	31	22	30	21	30	26	18	35	43	22	21				
Max. Annual Average (State)				12.9			11.9	11.3	11.0	10.8	10.2	8.6			10.6	10.2	13.1	10.0	10.0	9.7
Max. Annual Average (Nat)				12.9	11.4	12.6	11.8	11.3	10.9	10.7	10.2	8.6	7.8	12.5	10.8	7.6				
Calc Days Above State 24-Hr Std				0			0	0	0	0	0	0			0	0	12	0	0	0
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0		0					

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														14.5	10.0	15.1	74.7	21.9	18.1	11.3
Max. 24-Hr. Concentration (Nat)														14.5	10.0	15.1	74.7	21.9	18.1	11.3
98th Percentile of 24-Hr Conc.															9.4	11.3	46.3	15.1	9.0	10.5
Annual Average (State)																4.1	6.3	4.4	4.4	4.8
Avg. of Qtrly. Means (Nat)															4.3	4.2	6.3	4.4	4.4	4.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator				1.9	2.9	2.9														
Max. 1-Hr. Concentration				3.0	6.0	7.0														
Max. 8-Hr. Concentration				2.2	2.6	3.1														
Days Above State 8-Hr. Std.				0	0	0														
Days Above Nat. 8-Hr. Std.				0	0	0														

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-36

Lake Tahoe Air Basin

County: El Dorado

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.077	0.080	0.083	0.084	0.085	0.086	0.083	0.072	0.076	0.078	0.079	0.077	0.077	0.077	0.080	0.081	0.083	0.084	0.082	0.079
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.069	0.071	0.074	0.076	0.075	0.076	0.075		0.061	0.070	0.071	0.068	0.069	0.069	0.069	0.067	0.075	0.076	0.075	0.072
Peak 1-Hour Indicator (State)	0.081	0.085	0.089	0.092	0.092	0.093	0.088	0.079	0.079	0.083	0.083	0.083	0.082	0.081	0.088	0.090	0.093	0.092	0.089	0.084
4th High 1-Hr. in 3 Yrs2	0.080	0.090	0.090	0.090	0.090	0.090	0.090	0.080	0.083	0.086	0.083	0.083	0.081	0.081	0.089	0.089	0.089	0.088	0.088	0.084
Max. 8-Hr. Concentration	0.080	0.082	0.085	0.085	0.080	0.081	0.082	0.071	0.079	0.089	0.073	0.071	0.077	0.079	0.077	0.084	0.079	0.079	0.082	0.070
Maximum 1-Hr. Concentration	0.090	0.090	0.090	0.100	0.090	0.090	0.100	0.090	0.086	0.092	0.083	0.095	0.081	0.095	0.089	0.095	0.102	0.082	0.096	0.079
Days Above State 8-Hr. Std.	3	17	20	20	8	10	20	2	6	5	2	1	7	3	16	25	24	8	13	2
Days Above Nat. 8-Hr. Std.	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	2	0	0	1	0	0	0	0	1	0	1	0	1	1	0	1	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)							52	92	78	71	72	55	50	36	44	50	46	52	41	33
Max. 24-Hr. Concentration (Nat)							52	92	78	71	72	55	59	41	50	58	51	61	47	38
Max. Annual Average (State)									27.1	22.5		21.6	19.8	16.9	17.3	16.9	17.1	15.0		14.8
Max. Annual Average (Nat)							5.9	26.0	27.1	22.5	23.4	21.6	23.4	19.9	20.4	19.8	19.9	17.6	15.2	17.5
Calc Days Above State 24-Hr Std									42	18		13	0	0	0	0	0	6		0
Calc Days Above Nat 24-Hr Std									0	0	0	0	0	0	0	0	0	0		0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														21.0	23.0	31.0	27.0	24.0	23.2	
Max. 24-Hr. Concentration (Nat)														21.0	23.0	31.0	27.0	21.0	20.0	
98th Percentile of 24-Hr Conc.														21.0	22.0	26.0		19.0		
Annual Average (State)														8.3	7.8	8.2		7.2		
Avg. of Qtrly. Means (Nat)														8.3	7.8	8.2		7.2		

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	15.5	14.9	13.2	12.6	11.9	11.1	10.2	8.7	8.3	7.8	7.0	5.6	5.0	2.3	2.1	1.9	2.0	1.9	1.9	
Max. 1-Hr. Concentration	20.0	19.0	19.0	17.0	18.0	14.0	15.0	13.0	11.3	9.3	10.4	7.7	7.5	3.2	5.4	2.9	3.8	2.4	2.2	
Max. 8-Hr. Concentration	12.5	13.0	12.5	11.3	10.1	9.2	9.9	7.5	7.1	6.3	5.1	3.8	4.3	2.4	1.9	1.9	3.0	1.5	1.2	
Days Above Nat. 8-Hr. Std.	10	12	9	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
Days Above Lake Tahoe 8-Hr. Std.	96	87	80	67	39	24	13	12	9	1	0	0	0	0	0	0	0	0	0	

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.074	0.076	0.073	0.074	0.078	0.076	0.078	0.062	0.061	0.062	0.062	0.061	0.060	0.057	0.058	0.057	0.056	0.055	0.054	
Max. 1-Hr. Concentration	0.080	0.080	0.070	0.070	0.150	0.060	0.060	0.060	0.057	0.059	0.061	0.051	0.052	0.060	0.052	0.054	0.055	0.052	0.055	
Max. Annual Average	0.010	0.012	0.012		0.012	0.012		0.011	0.012	0.011	0.011	0.011	0.010	0.011	0.011	0.011	0.012	0.010		

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-37

A portion of El Dorado County lies within the Mountain Counties Air Basin.

Lake Tahoe Air Basin

County: Placer

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																		0.075	0.075	
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																		0.079	0.079	
4th High 1-Hr. in 3 Yrs2																		0.079	0.079	
Max. 8-Hr. Concentration																		0.070	0.061	
Maximum 1-Hr. Concentration																		0.086	0.065	
Days Above State 8-Hr. Std.																		2	0	
Days Above Nat. 8-Hr. Std.																		0	0	
Days Above State 1-Hr. Std.																		0	0	

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)										24	50									
Max. 24-Hr. Concentration (Nat)										24	50							87	35	
Max. Annual Average (State)																				
Max. Annual Average (Nat)										3.6	21.7							15.6	16.5	
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																		27.4	8.0	
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator								3.9	3.9	3.9								1.0	1.0	
Max. 1-Hr. Concentration								9.0	11.6	9.5								1.4	0.9	
Max. 8-Hr. Concentration								4.3	4.7	2.9								0.8	0.5	
Days Above Nat. 8-Hr. Std.								0	0	0								0	0	
Days Above Lake Tahoe 8-Hr. Std.								0	0	0								0	0	

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																			0.026	
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-38

Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

County: Kern

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)								0.124	0.113	0.117	0.111	0.108	0.114	0.110	0.110	0.105	0.104	0.107	0.106	0.108
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)										0.099	0.100	0.097	0.099	0.096	0.097	0.096	0.095	0.098	0.092	0.090
Peak 1-Hour Indicator (State)								0.140	0.129	0.137	0.125	0.122	0.125	0.121	0.121	0.116	0.115	0.117	0.114	0.117
4th High 1-Hr. in 3 Yrs2								0.130	0.130	0.142	0.123	0.123	0.126	0.119	0.119	0.118	0.116	0.118	0.113	0.111
Max. 8-Hr. Concentration								0.112	0.107	0.109	0.109	0.096	0.117	0.100	0.095	0.104	0.102	0.103	0.090	0.096
Maximum 1-Hr. Concentration								0.130	0.124	0.142	0.130	0.119	0.134	0.119	0.113	0.126	0.115	0.119	0.121	0.113
Days Above State 8-Hr. Std.								33	114	101	103	76	93	106	86	104	90	84	50	41
Days Above Nat. 8-Hr. Std.								13	46	46	42	19	40	34	15	32	26	27	3	9
Days Above State 1-Hr. Std.								15	43	54	46	22	43	39	25	33	18	31	8	8

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				54	462	534	65	50	33	143	92	130	159	40	90	112	194	158	44	51
Max. 24-Hr. Concentration (Nat)				54	462	534	65	64	116	235	92	130	165	45	90	115	208	162	47	55
Max. Annual Average (State)											16.9	18.4	15.0	17.7	20.3	19.8	24.2	21.5	18.3	
Max. Annual Average (Nat)				25.7	34.0	36.3	21.9	21.2	15.7	18.5	16.9	18.6	16.2	19.3	21.6	21.2	26.1	22.9	20.8	19.8
Calc Days Above State 24-Hr Std											0	6	0	0	6	6	12	12	0	
Calc Days Above Nat 24-Hr Std					6			0		0	0	0	0	0	0	0	7	6	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														27.6	38.6	15.3	31.4	23.2	17.8	26.1
Max. 24-Hr. Concentration (Nat)														27.6	38.6	15.3	31.4	23.2	17.8	26.1
98th Percentile of 24-Hr Conc.																13.9	28.0			16.2
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)															7.8	6.1	8.2	5.9	6.0	7.2

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator									0.063	0.067	0.072	0.072	0.072	0.067	0.070	0.066	0.067	0.064	0.062	0.063
Max. 1-Hr. Concentration								0.070	0.060	0.120	0.075	0.075	0.082	0.083	0.071	0.071	0.071	0.073	0.064	0.044
Max. Annual Average										0.008		0.010	0.011		0.010	0.010		0.009		

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-39

A portion of Kern County lies within the San Joaquin Valley Air Basin.

Mojave Desert Air Basin

County: Los Angeles

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.152	0.151	0.145	0.144	0.142	0.117	0.125	0.127	0.129	0.151	0.114	0.114	0.112	0.109	0.111	0.109	0.116	0.119	0.115	0.112
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.134	0.132	0.128	0.123	0.095		0.110	0.113	0.113	0.108	0.103	0.098	0.097	0.089	0.092	0.091		0.082	0.100	0.098
Peak 1-Hour Indicator (State)	0.187	0.192	0.187	0.180	0.178	0.140	0.154	0.159	0.161	0.194	0.138	0.135	0.140	0.132	0.138	0.129	0.140	0.135	0.132	0.128
4th High 1-Hr. in 3 Yrs2	0.190	0.190	0.180	0.170	0.170	0.140	0.160	0.160	0.160	0.185	0.138	0.129	0.137	0.137	0.139	0.128	0.135	0.135	0.133	0.127
Max. 8-Hr. Concentration	0.150	0.140	0.131	0.147	0.106	0.111	0.137	0.127	0.112	0.154	0.104	0.101	0.118	0.083	0.117	0.102	0.107	0.120	0.101	0.103
Maximum 1-Hr. Concentration	0.200	0.170	0.180	0.210	0.150	0.140	0.170	0.160	0.143	0.185	0.131	0.123	0.164	0.097	0.141	0.146	0.157	0.156	0.121	0.127
Days Above State 8-Hr. Std.	123	120	123	119	76	90	101	75	78	121	58	32	53	8	79	84	87	92	85	73
Days Above Nat. 8-Hr. Std.	79	76	91	65	36	39	53	36	33	70	18	7	18	0	28	24	38	33	24	31
Days Above State 1-Hr. Std.	108	105	105	95	52	62	78	59	62	92	40	14	24	1	35	37	46	50	37	42

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)					342	780	68	70	97	61	67	54	80	85			73	54	33	47
Max. 24-Hr. Concentration (Nat)					342	780	68	70	97	84	77	54	112	166	163	123	73	57	56	53
Max. Annual Average (State)								35.1			29.0			28.6			29.7	23.2		
Max. Annual Average (Nat)					49.5	58.0	32.6	34.9	29.3	21.3	22.7	29.4	27.3	28.6	27.5	29.6	28.4	25.7	24.8	22.2
Calc Days Above State 24-Hr Std								58			12			13			6	6		
Calc Days Above Nat 24-Hr Std						13	0	0		0		0		1	1	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														47.6	36.0	35.0	24.0	25.0	18.0	28.0
Max. 24-Hr. Concentration (Nat)														47.6	36.0	35.0	24.0	25.0	18.0	28.0
98th Percentile of 24-Hr Conc.														23.5	21.0		20.0	17.0	15.0	16.0
Annual Average (State)														11.2				9.4		8.9
Avg. of Qtrly. Means (Nat)														11.2	10.5		10.4	9.4	8.5	8.9

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.2	4.9	4.6	5.5	7.7	7.6	6.5	6.2	6.1	5.8	5.3	4.8	4.4	4.4	4.6	4.8	2.0	2.0	2.0	1.9
Max. 1-Hr. Concentration	9.0	12.0	11.0	13.0	11.0	10.0	9.0	8.0	9.1	7.5	6.8	5.9	5.4	7.2	6.0	6.1	3.4	3.2	2.9	2.9
Max. 8-Hr. Concentration	4.6	3.9	5.9	7.1	8.3	7.1	5.4	5.9	5.6	5.1	4.7	4.0	3.6	5.4	4.3	3.3	2.2	1.9	1.7	1.5
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.087	0.084	0.090	0.091	0.096	0.095	0.097	0.098	0.097	0.098	0.090	0.086	0.070	0.070	0.070	0.070	0.074	0.071	0.072	0.071
Max. 1-Hr. Concentration	0.090	0.090	0.090	0.080	0.090	0.110	0.160	0.110	0.097	0.140	0.080	0.071	0.077	0.083	0.065	0.075	0.101	0.067	0.103	0.074
Max. Annual Average	0.014	0.016	0.016	0.019		0.014	0.017	0.020	0.018	0.019	0.015				0.016		0.016	0.015	0.015	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-40

A portion of Los Angeles County lies within the South Coast Air Basin.

Mojave Desert Air Basin

County: Riverside

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.108	0.116	0.117	0.119	0.109	0.115	0.118	0.119										0.076	0.070	0.073
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)		0.101	0.103	0.102	0.096	0.099	0.101	0.101												0.063
Peak 1-Hour Indicator (State)	0.137	0.148	0.149	0.147	0.135	0.140	0.143	0.144										0.079	0.077	0.079
4th High 1-Hr. in 3 Yrs2	0.150	0.148	0.148	0.147	0.134	0.130	0.130	0.131										0.077	0.077	0.077
Max. 8-Hr. Concentration	0.105	0.127	0.105	0.117	0.102	0.115	0.115	0.108										0.071	0.067	0.072
Maximum 1-Hr. Concentration	0.160	0.148	0.140	0.140	0.130	0.130	0.138	0.140										0.077	0.078	0.084
Days Above State 8-Hr. Std.	70	89	48	49	45	81	79	39										1	0	1
Days Above Nat. 8-Hr. Std.	30	49	16	20	18	37	39	16										0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
Max. Annual Average (State)																				
Max. Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

No Monitoring Data Available

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-41

Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

Mojave Desert Air Basin

County: San Bernardino

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.209	0.201	0.198	0.169	0.178	0.177	0.172	0.162	0.154	0.157	0.153	0.152	0.151	0.138	0.130	0.118	0.120	0.121	0.122	0.120
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.098	0.163	0.165	0.153	0.151	0.151	0.147	0.139	0.138	0.133	0.131	0.124	0.127	0.118	0.110	0.102	0.106	0.106	0.107	0.105
Peak 1-Hour Indicator (State)	0.232	0.230	0.233	0.204	0.214	0.223	0.219	0.193	0.191	0.192	0.186	0.172	0.176	0.162	0.154	0.136	0.139	0.137	0.139	0.138
4th High 1-Hr. in 3 Yrs2	0.240	0.230	0.230	0.210	0.220	0.230	0.230	0.200	0.190	0.210	0.182	0.175	0.167	0.166	0.164	0.135	0.143	0.138	0.138	0.138
Max. 8-Hr. Concentration	0.225	0.161	0.167	0.161	0.198	0.173	0.165	0.147	0.155	0.170	0.146	0.133	0.144	0.122	0.132	0.117	0.123	0.130	0.119	0.123
Maximum 1-Hr. Concentration	0.260	0.220	0.270	0.220	0.270	0.240	0.230	0.200	0.188	0.240	0.175	0.187	0.202	0.137	0.163	0.146	0.148	0.163	0.138	0.145
Days Above State 8-Hr. Std.	171	172	170	172	179	162	168	157	170	139	148	150	122	146	129	117	126	133	121	123
Days Above Nat. 8-Hr. Std.	136	135	137	136	118	122	128	121	126	94	83	74	60	61	61	47	59	61	41	49
Days Above State 1-Hr. Std.	142	147	148	150	135	132	148	129	137	109	98	95	74	74	79	52	68	78	63	59

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			63	191	381	389	80	79	140	85	138	85	70	109	80	84	98	169	83	70
Max. 24-Hr. Concentration (Nat)			63	191	381	389	80	79	140	85	138	85	89	109	96	172	522	361	199	131
Max. Annual Average (State)				42.5			39.7	34.4	27.9		28.9	27.4	15.6	32.2	33.6	29.7	34.0	27.9		26.1
Max. Annual Average (Nat)			34.7	42.5	40.9	36.9	39.4	35.2	42.1	14.7	28.9	27.3	27.8	32.1	33.6	29.8	32.8	30.6	28.7	28.7
Calc Days Above State 24-Hr Std				72			84	50	6		18	6	0	31	37	18	55	18		19
Calc Days Above Nat 24-Hr Std				6		7	0	0	0		0	0	0	0	0	1	3	2	2	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														25.4	31.0	32.0	38.0	28.0	34.0	27.0
Max. 24-Hr. Concentration (Nat)														25.4	31.0	32.0	38.0	28.0	34.0	27.0
98th Percentile of 24-Hr Conc.														20.4	23.0	21.0	34.0	23.0	20.0	20.0
Annual Average (State)																11.5	13.9		10.8	
Avg. of Qtrly. Means (Nat)														11.9	12.0	11.5	13.9	11.4	10.8	9.4

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	3.4	3.5	4.2	4.1	4.1	4.2	4.3	3.8	3.8	2.9	7.4	2.3	2.4	2.1	1.7	1.8	1.8	1.8	1.8	1.7
Max. 1-Hr. Concentration	8.0	6.0	10.0	7.0	9.0	5.0	6.0	5.0	7.9	6.1	8.4	4.1	3.9	10.3	3.0	3.8	3.0	3.9	2.4	3.3
Max. 8-Hr. Concentration	3.4	4.0	5.8	3.9	3.9	3.9	3.4	3.5	3.2	2.7	7.5	3.1	2.2	3.2	1.6	1.7	1.8	2.1	1.7	1.6
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.130	0.134	0.112	0.100	0.182	0.259	0.275	0.289	0.202	0.124	0.119	0.097	0.102	0.105	0.106	0.099	0.096	0.092	0.092	0.090
Max. 1-Hr. Concentration	0.150	0.130	0.100	0.120	0.190	0.350	0.240	0.360	0.138	0.118	0.087	0.107	0.196	0.113	0.105	0.102	0.091	0.095	0.101	0.087
Max. Annual Average	0.021		0.018	0.026	0.019		0.025		0.024	0.023	0.021	0.020	0.022	0.024	0.025	0.024	0.025	0.024	0.023	0.022

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03	0.03	0.07	0.06	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Max. Annual Average	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.00	0.02	0.03	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00

Table A-42

A portion of San Bernardino County lies within the South Coast Air Basin.

Mountain Counties Air Basin

County: Amador

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)							0.101	0.099	0.100	0.104	0.106	0.108	0.115	0.114	0.113	0.102	0.101	0.095	0.093	0.096
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)									0.091	0.091	0.093	0.090	0.095	0.096	0.099	0.091	0.088	0.085	0.084	0.084
Peak 1-Hour Indicator (State)							0.117	0.115	0.118	0.119	0.123	0.124	0.134	0.130	0.127	0.114	0.113	0.110	0.110	0.110
4th High 1-Hr. in 3 Yrs2							0.120	0.120	0.120	0.119	0.123	0.127	0.128	0.128	0.126	0.118	0.111	0.108	0.110	0.107
Max. 8-Hr. Concentration							0.105	0.090	0.104	0.112	0.106	0.104	0.115	0.107	0.102	0.087	0.092	0.085	0.088	0.097
Maximum 1-Hr. Concentration							0.120	0.110	0.123	0.146	0.127	0.135	0.143	0.121	0.121	0.107	0.118	0.111	0.110	0.116
Days Above State 8-Hr. Std.							57	40	63	52	63	26	51	64	47	28	38	30	20	22
Days Above Nat. 8-Hr. Std.							11	5	15	18	14	3	28	13	14	2	7	2	2	4
Days Above State 1-Hr. Std.							15	11	15	21	21	9	30	22	13	4	8	12	3	8

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)												30								
Max. 24-Hr. Concentration (Nat)												30								
Max. Annual Average (State)																				
Max. Annual Average (Nat)												20.4								
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator							2.5	2.2	2.0	2.0	1.7	1.5	1.4	1.5	1.6	1.5	1.4	1.3	1.4	1.2
Max. 1-Hr. Concentration							3.0	3.0	9.3	9.3	2.2	2.8	2.5	2.2	5.0	3.5	3.0	2.2	5.7	2.4
Max. 8-Hr. Concentration							2.4	3.0	1.8	2.6	1.5	1.4	1.4	1.5	1.3	1.4	1.2	1.2	4.3	1.0
Days Above State 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-43

Mountain Counties Air Basin

County: Calaveras

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)									0.109	0.106	0.109	0.110	0.116	0.113	0.113	0.104	0.104	0.103	0.104	0.103
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)											0.097	0.093	0.096	0.096	0.100	0.094	0.092	0.091	0.090	0.091
Peak 1-Hour Indicator (State)									0.123	0.120	0.123	0.124	0.129	0.123	0.124	0.116	0.116	0.116	0.117	0.117
4th High 1-Hr. in 3 Yrs2									0.121	0.121	0.130	0.130	0.130	0.124	0.124	0.120	0.117	0.117	0.113	0.113
Max. 8-Hr. Concentration									0.108	0.107	0.112	0.112	0.109	0.106	0.105	0.090	0.108	0.097	0.088	0.098
Maximum 1-Hr. Concentration									0.121	0.146	0.138	0.140	0.134	0.126	0.134	0.120	0.131	0.117	0.111	0.126
Days Above State 8-Hr. Std.									92	60	68	35	67	65	48	48	61	67	30	47
Days Above Nat. 8-Hr. Std.									34	19	18	4	28	18	17	5	12	18	4	8
Days Above State 1-Hr. Std.									35	23	24	6	27	21	16	8	14	20	7	9

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)									44	118	36	112	34	63	36	42	47	39	34	33
Max. 24-Hr. Concentration (Nat)									44	118	36	112	35	65	35	44	44	40	33	34
Max. Annual Average (State)										20.9	17.7		15.6		17.7	19.2	20.9	18.2	17.3	14.2
Max. Annual Average (Nat)									23.6	21.0	17.8	19.9	15.8	20.7	17.9	19.4	20.9	18.2	17.2	14.2
Calc Days Above State 24-Hr Std										12	0		0		0	0	0	0	0	0
Calc Days Above Nat 24-Hr Std										0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														33.0	48.0	31.0	40.0	20.0	24.0	21.0
Max. 24-Hr. Concentration (Nat)														33.0	48.0	31.0	40.0	20.0	24.0	21.0
98th Percentile of 24-Hr Conc.														28.0	30.0	18.0	30.0	19.0	21.0	18.0
Annual Average (State)														11.1	9.0	8.1	9.9	8.6	7.6	7.0
Avg. of Qtrly. Means (Nat)														11.1	9.0	8.1	9.9	8.6	7.6	7.0

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator									0.7	1.0	0.9	0.9	0.9	0.9	0.8	1.1	1.0	1.0	0.7	0.7
Max. 1-Hr. Concentration									1.5	2.1	1.7	2.1	1.8	1.8	1.2	6.2	1.2	0.9	1.6	1.2
Max. 8-Hr. Concentration									0.7	1.8	0.9	1.7	0.9	0.8	0.9	4.3	0.8	0.7	1.1	0.6
Days Above State 8-Hr. Std.									0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.									0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-44

Mountain Counties Air Basin

County: El Dorado

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)				0.125			0.114	0.111	0.113	0.117	0.122	0.119	0.125	0.124	0.126	0.119	0.124	0.127	0.126	0.116
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)									0.097	0.099	0.103	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.102	0.097
Peak 1-Hour Indicator (State)				0.131			0.128	0.122	0.127	0.128	0.137	0.140	0.147	0.143	0.143	0.136	0.142	0.146	0.143	0.130
4th High 1-Hr. in 3 Yrs2				0.130			0.120	0.120	0.124	0.124	0.136	0.145	0.145	0.145	0.144	0.144	0.148	0.148	0.145	0.139
Max. 8-Hr. Concentration				0.110			0.112	0.108	0.104	0.113	0.113	0.106	0.127	0.118	0.113	0.109	0.137	0.122	0.102	0.104
Maximum 1-Hr. Concentration				0.130			0.120	0.120	0.130	0.126	0.136	0.145	0.163	0.144	0.128	0.148	0.156	0.145	0.113	0.116
Days Above State 8-Hr. Std.				44			83	51	77	60	83	57	64	92	71	81	99	83	60	60
Days Above Nat. 8-Hr. Std.				24			29	12	22	31	36	16	26	40	31	35	42	27	11	25
Days Above State 1-Hr. Std.				21			29	10	26	32	41	19	32	39	37	42	50	37	16	26

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)							103	62	34	53	58	62	39	46	38	51	36	50	28	25
Max. 24-Hr. Concentration (Nat)							103	62	34	53	58	62	41	49	38	52	37	51	28	27
Max. Annual Average (State)								18.4	18.0	18.1		17.4	14.3	17.7	7.3	16.0	16.4	14.4	14.8	12.9
Max. Annual Average (Nat)							21.3	18.4	18.0	18.1	17.0	17.4	14.9	18.5	16.5	16.8	17.3	15.1	15.4	13.5
Calc Days Above State 24-Hr Std								6	0	6		6	0	0	0	6	0	0	0	0
Calc Days Above Nat 24-Hr Std								0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)															10.0	26.0	1.0	21.7	33.0	
Max. 24-Hr. Concentration (Nat)															10.0	26.0	1.0			
98th Percentile of 24-Hr Conc.															9.0	17.0				
Annual Average (State)															3.8					
Avg. of Qtrly. Means (Nat)															3.8	3.8				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator				4.1	4.3		1.6	1.3	1.3	1.2	1.0	1.0	0.9	0.8	0.8	0.9	0.8	1.3	1.5	0.9
Max. 1-Hr. Concentration				6.0	5.0		3.0	2.0	1.7	1.6	1.3	1.6	1.7	1.4	2.7	3.1	2.5	2.4	6.1	1.5
Max. 8-Hr. Concentration				4.6	3.5		2.4	1.5	1.0	1.0	0.9	0.8	0.9	0.9	1.2	1.0	0.8	1.9	4.4	0.7
Days Above State 8-Hr. Std.				0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.				0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																0.068	0.063	0.062	0.062	
Max. 1-Hr. Concentration															0.086	0.090	0.088	0.059	0.068	
Max. Annual Average																		0.002		

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-45

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mountain Counties Air Basin

County: Mariposa

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)		0.106	0.104	0.103	0.106	0.107	0.107	0.114	0.111	0.109	0.107	0.109	0.110	0.110	0.108	0.105	0.102	0.102	0.104	0.100
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)				0.090	0.090	0.086	0.089	0.096	0.095	0.095	0.091	0.095	0.095	0.095	0.094	0.091	0.089	0.091	0.090	0.088
Peak 1-Hour Indicator (State)		0.119	0.120	0.117	0.117	0.117	0.117	0.114	0.115	0.114	0.108	0.111	0.114	0.120	0.117	0.113	0.108	0.111	0.111	0.110
4th High 1-Hr. in 3 Yrs2		0.145	0.133	0.128	0.113	0.110	0.110	0.110	0.111	0.111	0.111	0.111	0.114	0.120	0.117	0.117	0.116	0.116	0.113	0.113
Max. 8-Hr. Concentration		0.111	0.096	0.093	0.096	0.102	0.095	0.111	0.104	0.103	0.107	0.105	0.103	0.105	0.100	0.098	0.097	0.103	0.124	0.096
Maximum 1-Hr. Concentration		0.145	0.119	0.110	0.120	0.110	0.111	0.120	0.113	0.114	0.111	0.120	0.114	0.155	0.121	0.116	0.106	0.135	0.137	0.109
Days Above State 8-Hr. Std.		74	75	31	72	85	68	71	84	81	103	55	69	95	72	69	105	110	70	45
Days Above Nat. 8-Hr. Std.		22	20	4	20	31	9	22	12	24	30	7	14	24	14	8	26	28	9	5
Days Above State 1-Hr. Std.		27	26	2	20	19	10	17	10	20	28	7	13	16	10	4	19	15	7	6

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				84	209	350	104	126	115	71	106	62	36	75	89	277	72	58	124	73
Max. 24-Hr. Concentration (Nat)				84	209	350	104	126	115	71	106	62	40	82	98	312	76	66	133	78
Max. Annual Average (State)						48.4			33.9							29.6	25.9	21.0		
Max. Annual Average (Nat)				26.9	40.9	47.8	30.9	29.2	34.6	28.0	20.9	21.3	20.4	26.7	26.3	33.3	28.5	23.1	23.5	23.9
Calc Days Above State 24-Hr Std						95			87							37	18	6		
Calc Days Above Nat 24-Hr Std					10	14	0		0	0		0	0	0	0	6	0	0		0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																	29.0	54.0	148.4	73.2
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																			4.8	2.8
Max. 1-Hr. Concentration							6.2											2.5	6.5	2.0
Max. 8-Hr. Concentration							4.5											1.5	5.7	1.1
Days Above State 8-Hr. Std.							0											0	0	0
Days Above Nat. 8-Hr. Std.							0											0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																	0.043	0.019		
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-46

Mountain Counties Air Basin

County: Nevada

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)				0.115	0.115	0.108	0.101	0.066	0.101	0.101	0.110	0.109	0.108	0.105	0.107	0.106	0.110	0.111	0.110	0.110
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)						0.092	0.088		0.049	0.076	0.087	0.089	0.095	0.095	0.096	0.097	0.098	0.098	0.097	0.098
Peak 1-Hour Indicator (State)				0.118	0.125	0.118	0.110	0.076	0.111	0.111	0.116	0.114	0.114	0.114	0.117	0.118	0.117	0.117	0.115	0.115
4th High 1-Hr. in 3 Yrs2				0.120	0.150	0.150	0.150	0.090	0.110	0.110	0.110	0.109	0.111	0.112	0.118	0.116	0.117	0.116	0.117	0.118
Max. 8-Hr. Concentration				0.107	0.115	0.096	0.087	0.078	0.107	0.092	0.104	0.101	0.099	0.103	0.113	0.106	0.113	0.103	0.111	0.120
Maximum 1-Hr. Concentration				0.120	0.150	0.110	0.110	0.090	0.110	0.099	0.111	0.108	0.119	0.165	0.130	0.116	0.127	0.120	0.126	0.128
Days Above State 8-Hr. Std.				32	36	39	36	2	41	30	94	85	80	97	90	72	90	94	73	66
Days Above Nat. 8-Hr. Std.				11	9	7	5	0	9	4	29	17	25	33	28	23	28	23	14	20
Days Above State 1-Hr. Std.				12	8	7	2	0	8	3	22	10	16	20	21	21	24	23	11	15

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)							30	34			44	81	92	84	49					
Max. 24-Hr. Concentration (Nat)			38				30	34			90	179	114	105	62	71	53	38	107	127
Max. Annual Average (State)												28.3								
Max. Annual Average (Nat)			3.5				21.7	14.4			32.2	38.3	32.5	27.9	22.5	18.5	17.8	15.5	32.3	29.9
Calc Days Above State 24-Hr Std												41								
Calc Days Above Nat 24-Hr Std												2	0	0	0	0			0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														50.0	27.0	120.0	23.0	21.0	34.0	35.0
Max. 24-Hr. Concentration (Nat)														50.0	27.0	120.0	23.0	21.0	34.0	35.0
98th Percentile of 24-Hr Conc.															23.0	26.0	16.0	20.0	18.0	17.0
Annual Average (State)																		7.2	7.7	
Avg. of Qtrly. Means (Nat)															8.8	9.4	7.5	7.2	6.8	6.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration						1.0	0.0	10.0	9.0											
Max. 8-Hr. Concentration						0.1	0.0	5.4	5.4											
Days Above State 8-Hr. Std.						0	0	0	0											
Days Above Nat. 8-Hr. Std.						0	0	0	0											

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-47

Mountain Counties Air Basin

County: Placer

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)			0.128	0.119	0.119	0.112	0.104	0.102	0.103	0.107	0.107	0.100	0.098	0.099	0.100	0.098	0.119	0.110	0.107	0.104
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)					0.089	0.063			0.092	0.092	0.091	0.086	0.086	0.086	0.079	0.073	0.077	0.088	0.092	0.091
Peak 1-Hour Indicator (State)			0.155	0.134	0.134	0.109	0.119	0.118	0.119	0.121	0.118	0.111	0.106	0.111	0.114	0.113	0.130	0.123	0.117	0.116
4th High 1-Hr. in 3 Yrs2			0.160	0.160	0.160	0.110	0.130	0.120	0.120	0.119	0.117	0.109	0.103	0.105	0.111	0.111	0.130	0.121	0.118	0.118
Max. 8-Hr. Concentration			0.138	0.101	0.078	0.035	0.098	0.097	0.107	0.100	0.091	0.097	0.108	0.093	0.058	0.088	0.113	0.097	0.102	0.108
Maximum 1-Hr. Concentration			0.160	0.120	0.090	0.060	0.130	0.120	0.122	0.130	0.108	0.103	0.132	0.159	0.070	0.095	0.142	0.121	0.106	0.125
Days Above State 8-Hr. Std.			79	59	2	0	59	33	56	29	22	13	39	54	0	9	54	46	42	45
Days Above Nat. 8-Hr. Std.			35	22	0	0	12	4	12	11	5	2	8	9	0	2	18	12	9	13
Days Above State 1-Hr. Std.			39	24	0	0	17	9	15	16	4	2	11	9	0	2	17	13	12	18

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)										86	60	74								
Max. 24-Hr. Concentration (Nat)										86	60	74								
Max. Annual Average (State)																				
Max. Annual Average (Nat)										22.9	21.8	21.9								
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std											0	0								

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-48

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Mountain Counties Air Basin

County: Plumas

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.085	0.085						0.077	0.085	0.090	0.091	0.093	0.078	0.079	0.079	0.080	0.084	0.083	0.086	0.069
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)									0.062	0.077	0.078	0.065	0.060	0.060	0.070	0.069	0.071	0.069	0.067	0.062
Peak 1-Hour Indicator (State)	0.091	0.091						0.086	0.086	0.092	0.093	0.096	0.083	0.084	0.083	0.083	0.087	0.088	0.088	0.072
4th High 1-Hr. in 3 Yrs2	0.090	0.090						0.090	0.090	0.092	0.092	0.092	0.090	0.084	0.083	0.084	0.089	0.089	0.089	0.074
Max. 8-Hr. Concentration	0.078	0.073					0.040	0.076	0.083	0.096	0.080	0.042	0.074	0.077	0.076	0.072	0.084	0.064	0.066	0.068
Maximum 1-Hr. Concentration	0.090	0.080					0.050	0.090	0.090	0.105	0.091	0.046	0.087	0.086	0.081	0.086	0.091	0.075	0.073	0.076
Days Above State 8-Hr. Std.	7	2					0	3	25	23	6	0	2	8	2	2	50	0	0	0
Days Above Nat. 8-Hr. Std.	0	0					0	0	0	2	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0					0	0	0	1	0	0	0	0	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			113	144	138	162	120	130	98	52	55	66	69	115	67	60	48	33	37	53
Max. 24-Hr. Concentration (Nat)			113	144	138	162	120	130	98	52	55	66	74	125	75	60	68	50	58	65
Max. Annual Average (State)									33.4	24.2	21.5		25.3	25.3	19.9			17.6		18.0
Max. Annual Average (Nat)			28.1	77.9	38.2	40.3	37.5	35.4	33.0	24.0	25.9	23.0	25.3	27.6	21.3	22.5	18.0	20.0	23.0	20.1
Calc Days Above State 24-Hr Std									42	6	6		19	24	25			0		6
Calc Days Above Nat 24-Hr Std					0		0		0	0	0	0	0	0	0	0	0		0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														92.0	46.0	58.0	41.0	47.8	53.8	179.7
Max. 24-Hr. Concentration (Nat)														92.0	46.0	58.0	41.0	43.0	44.0	60.0
98th Percentile of 24-Hr Conc.														84.0		43.0		40.0	33.0	27.0
Annual Average (State)																			11.7	10.6
Avg. of Qtrly. Means (Nat)																15.6		13.3	11.7	10.6

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	4.5	4.5																		
Max. 1-Hr. Concentration	6.0	3.0																		
Max. 8-Hr. Concentration	4.2	2.3																		
Days Above State 8-Hr. Std.	0	0																		
Days Above Nat. 8-Hr. Std.	0	0																		

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.046	0.046																		
Max. 1-Hr. Concentration	0.050	0.040																		
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-49

Mountain Counties Air Basin

County: Sierra

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

No Monitoring Data Available

PM$_{10}$ (μg/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)											114	138	60	68	34					
Max. 24-Hr. Concentration (Nat)											114	138	60	68	39					
Max. Annual Average (State)														25.0						
Max. Annual Average (Nat)											29.6	32.0	22.6	25.0	15.2					
Calc Days Above State 24-Hr Std														12						
Calc Days Above Nat 24-Hr Std												0	0	0						

PM$_{2.5}$ (μg/m^3)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-50

Mountain Counties Air Basin

County: Tuolumne

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)				0.083	0.084	0.084	0.097	0.095	0.095	0.098	0.103	0.103	0.107	0.108	0.106	0.104	0.106	0.095	0.096	0.092
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)					0.077	0.075	0.074	0.076	0.085	0.087	0.088	0.088	0.092	0.092	0.096	0.092	0.091	0.085	0.084	0.081
Peak 1-Hour Indicator (State)				0.085	0.089	0.089	0.102	0.101	0.103	0.105	0.111	0.111	0.117	0.115	0.114	0.108	0.109	0.105	0.105	0.102
4th High 1-Hr. in 3 Yrs2			0.096	0.095	0.095	0.090	0.100	0.100	0.102	0.103	0.116	0.117	0.117	0.116	0.114	0.109	0.110	0.104	0.102	0.104
Max. 8-Hr. Concentration			0.086	0.078	0.081	0.078	0.097	0.088	0.094	0.105	0.108	0.107	0.107	0.103	0.104	0.097	0.101	0.088	0.082	0.089
Maximum 1-Hr. Concentration			0.096	0.090	0.090	0.090	0.100	0.120	0.107	0.135	0.121	0.117	0.122	0.130	0.109	0.109	0.132	0.116	0.089	0.112
Days Above State 8-Hr. Std.			31	7	9	12	31	47	72	55	83	56	82	104	81	54	98	60	17	25
Days Above Nat. 8-Hr. Std.			3	0	0	0	1	6	9	14	21	7	26	25	26	5	25	7	0	1
Days Above State 1-Hr. Std.			2	0	0	0	2	5	8	9	25	8	21	17	13	4	16	8	0	3

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
Max. Annual Average (State)																				
Max. Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

No Monitoring Data Available

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator							2.9	2.9	2.8	2.8	2.7	2.4	5.1	5.4	5.7	2.4	1.6	1.6	1.4	1.3
Max. 1-Hr. Concentration							4.0	5.0	4.4	3.9	4.5	6.6	6.7	4.1	3.4	2.8	3.7	2.5	1.8	2.2
Max. 8-Hr. Concentration							2.6	3.0	2.7	3.4	2.6	1.9	5.5	3.0	1.6	1.6	1.5	1.4	1.3	1.2
Days Above State 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-51

North Central Coast Air Basin

County: Monterey

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.084	0.085	0.080	0.087	0.088	0.083	0.082	0.082	0.084	0.083	0.083	0.082	0.082	0.070	0.073	0.071	0.073	0.073	0.076	0.070
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.071	0.071	0.068	0.072	0.070	0.070	0.071	0.069	0.070	0.069	0.067	0.066	0.066	0.062	0.064	0.063	0.064	0.066	0.068	0.065
Peak 1-Hour Indicator (State)	0.095	0.095	0.092	0.098	0.096	0.094	0.093	0.091	0.094	0.096	0.092	0.090	0.093	0.084	0.088	0.082	0.081	0.082	0.082	0.078
4th High 1-Hr. in 3 Yrs2	0.090	0.090	0.090	0.090	0.090	0.100	0.090	0.090	0.090	0.090	0.091	0.087	0.089	0.084	0.085	0.081	0.082	0.082	0.080	0.080
Max. 8-Hr. Concentration	0.076	0.077	0.077	0.095	0.080	0.078	0.085	0.083	0.092	0.077	0.081	0.076	0.076	0.072	0.079	0.079	0.073	0.081	0.079	0.065
Maximum 1-Hr. Concentration	0.080	0.090	0.090	0.130	0.090	0.100	0.090	0.110	0.093	0.093	0.094	0.091	0.091	0.086	0.095	0.085	0.082	0.092	0.093	0.073
Days Above State 8-Hr. Std.	4	4	2	9	7	5	3	8	4	1	11	2	1	1	3	2	1	5	3	0
Days Above Nat. 8-Hr. Std.	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	3	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				54	56	46	41	86	50	50	50	91	54	94	77	72	60	90	58	60
Max. 24-Hr. Concentration (Nat)				54	57	55	45	86	50	50	50	91	52	91	74	68	62	87	56	58
Max. Annual Average (State)					22.5			11.6	19.5	20.6	20.0	21.4		30.3	31.2		28.9	31.6	25.9	15.8
Max. Annual Average (Nat)				25.4	29.1	23.4	19.7	19.5	19.5	20.6	20.0	29.9	27.0	29.0	29.9	29.4	27.7	30.1	24.9	18.4
Calc Days Above State 24-Hr Std					6			0	0	0	0	6		12	24		25	41	13	0
Calc Days Above Nat 24-Hr Std				0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														30.8	26.4	25.6	23.5	15.9	22.3	16.2
Max. 24-Hr. Concentration (Nat)														30.8	26.4	25.6	23.5	15.9	22.3	16.2
98th Percentile of 24-Hr Conc.														25.0	21.5	21.7	22.8	14.0	15.5	14.2
Annual Average (State)																	9.1	7.3		6.8
Avg. of Qtrly. Means (Nat)														9.8	7.9	8.6	9.1	7.3	7.0	6.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.0	2.0	2.0	1.6	1.6	1.5	1.4	1.2	1.2
Max. 1-Hr. Concentration	4.0	5.0	6.0	5.0	5.0	4.0	4.0	4.0	4.6	3.2	5.5	4.4	3.8	3.8	3.5	3.3	2.3	2.8	1.9	2.1
Max. 8-Hr. Concentration	2.3	2.3	2.4	2.4	2.5	2.5	2.9	2.7	2.1	2.1	2.6	1.8	2.2	1.8	1.4	1.6	1.4	1.1	1.2	0.9
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.083	0.083	0.077	0.072	0.071	0.068	0.062	0.064	0.064	0.062	0.059	0.059	0.059	0.054	0.046	0.045	0.046	0.046	0.050	0.051
Max. 1-Hr. Concentration	0.110	0.070	0.070	0.070	0.060	0.060	0.070	0.070	0.067	0.054	0.060	0.056	0.085	0.054	0.071	0.041	0.049	0.053	0.139	0.052
Max. Annual Average	0.014		0.014	0.014	0.012	0.011	0.012	0.012	0.012		0.011	0.010	0.010		0.007	0.007	0.007	0.006	0.007	0.008

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.01	0.01	0.01	0.01	0.01															
Max. Annual Average	0.00	0.00	0.00	0.00	0.00															
Max. 24-Hr. Concentration	0.01	0.00	0.00	0.00	0.00															

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North Central Coast Air Basin

County: San Benito

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.091	0.120	0.114	0.110	0.095	0.095	0.097	0.095	0.091	0.091	0.097	0.097	0.099	0.093	0.094	0.089	0.092	0.092	0.091	0.084
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.078	0.082	0.079	0.090	0.084	0.083	0.084	0.083	0.081	0.081	0.085	0.084	0.086	0.082	0.082	0.079	0.081	0.081	0.081	0.076
Peak 1-Hour Indicator (State)	0.109	0.145	0.137	0.132	0.115	0.112	0.113	0.112	0.107	0.106	0.111	0.111	0.112	0.102	0.106	0.101	0.103	0.103	0.102	0.097
4th High 1-Hr. in 3 Yrs2	0.100	0.146	0.140	0.140	0.120	0.110	0.110	0.110	0.110	0.104	0.114	0.114	0.114	0.109	0.107	0.100	0.104	0.106	0.104	0.095
Max. 8-Hr. Concentration	0.083	0.113	0.096	0.100	0.095	0.108	0.090	0.087	0.084	0.102	0.101	0.091	0.097	0.085	0.084	0.088	0.094	0.088	0.083	0.085
Maximum 1-Hr. Concentration	0.100	0.146	0.127	0.140	0.120	0.140	0.110	0.110	0.101	0.138	0.120	0.112	0.124	0.107	0.098	0.108	0.115	0.111	0.093	0.107
Days Above State 8-Hr. Std.	8	84	48	23	28	32	28	29	23	32	49	16	33	24	22	20	36	26	12	7
Days Above Nat. 8-Hr. Std.	0	26	6	1	5	3	3	2	0	3	9	1	6	1	0	2	5	2	0	1
Days Above State 1-Hr. Std.	1	37	14	8	10	9	9	8	6	7	16	1	9	2	2	3	8	2	0	2

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				58	48	55	17	61	37	50	38	34	39	68	41	42	59	36	41	37
Max. 24-Hr. Concentration (Nat)				58	48	55	17	61	37	50	38	34	37	67	40	42	59	36	40	36
Max. Annual Average (State)				24.3				18.9		17.2	16.8	18.0		22.6	16.4		18.5	16.7	15.6	15.9
Max. Annual Average (Nat)				24.4	19.8	22.6	2.7	18.8	16.9	17.2	16.8	18.0	15.7	21.8	15.7	17.6	17.9	16.4	15.1	15.3
Calc Days Above State 24-Hr Std				6				12		0	0	0		13	0		7	0	0	0
Calc Days Above Nat 24-Hr Std				0		0		0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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North Central Coast Air Basin

County: Santa Cruz

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.080	0.077	0.075	0.074	0.070	0.068	0.079	0.090	0.086	0.088	0.082	0.080	0.081	0.075	0.078	0.075	0.077	0.076	0.078	0.074
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.066	0.067	0.062	0.061	0.060	0.058	0.058	0.059	0.072	0.062	0.066	0.067	0.068	0.066	0.066	0.065	0.064	0.065	0.066	0.063
Peak 1-Hour Indicator (State)	0.096	0.098	0.095	0.093	0.084	0.083	0.089	0.099	0.103	0.104	0.098	0.095	0.097	0.088	0.090	0.087	0.087	0.085	0.087	0.082
4th High 1-Hr. in 3 Yrs2	0.090	0.090	0.090	0.090	0.080	0.090	0.090	0.100	0.100	0.100	0.097	0.091	0.092	0.084	0.089	0.084	0.085	0.085	0.085	0.081
Max. 8-Hr. Concentration	0.077	0.073	0.070	0.087	0.080	0.082	0.075	0.086	0.078	0.070	0.088	0.071	0.077	0.072	0.078	0.073	0.077	0.074	0.083	0.066
Maximum 1-Hr. Concentration	0.090	0.090	0.080	0.100	0.100	0.120	0.090	0.100	0.094	0.097	0.107	0.089	0.107	0.097	0.096	0.085	0.086	0.098	0.091	0.078
Days Above State 8-Hr. Std.	1	2	0	3	1	2	1	13	4	0	7	1	1	3	2	2	1	2	3	0
Days Above Nat. 8-Hr. Std.	0	0	0	1	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	1	1	2	0	7	0	1	2	0	1	1	1	0	0	1	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			65	51	49	49	36	102	106	152	115	113	78	106	52	74	81	72	83	69
Max. 24-Hr. Concentration (Nat)			65	51	49	49	36	102	106	152	115	113	76	103	50	72	77	70	80	66
Max. Annual Average (State)					23.8	24.3		21.7	31.1	36.3	32.8	36.9		32.3	27.1		28.0	28.6	28.2	24.3
Max. Annual Average (Nat)			26.3	25.5	23.9	24.3	17.4	35.6	31.1	36.4	32.8	37.0	28.5	30.9	26.2	28.7	26.8	27.3	27.3	23.6
Calc Days Above State 24-Hr Std					0	0		12	31	71	71	72		50	18		24	31	43	12
Calc Days Above Nat 24-Hr Std					0	0		0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														31.3	23.3	23.1	22.8	15.0	22.6	21.7
Max. 24-Hr. Concentration (Nat)														31.3	23.3	23.1	22.8	15.0	22.6	21.7
98th Percentile of 24-Hr Conc.														21.9	17.9	23.1	22.0	13.6		
Annual Average (State)															7.9	9.1	8.6			
Avg. of Qtrly. Means (Nat)														9.4	7.9	9.1	8.6	7.4		

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator		1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.8
Max. 1-Hr. Concentration		1.0	2.0	3.0	2.0	1.0	2.0	1.0	2.2	1.4	3.0	0.9	1.0	2.0	1.3	1.9	1.3	1.6	2.1	1.6
Max. 8-Hr. Concentration		1.0	1.3	1.3	1.0	1.0	1.2	1.0	1.3	0.9	1.0	0.7	0.9	0.8	0.8	1.0	0.8	0.7	1.0	0.9
Days Above State 8-Hr. Std.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator		0.044	0.048	0.049	0.050	0.049	0.047	0.043	0.051	0.052	0.050	0.045	0.041	0.035	0.036	0.036	0.035	0.036	0.035	0.031
Max. 1-Hr. Concentration	0.040	0.050	0.050	0.040	0.050	0.040	0.040	0.050	0.045	0.053	0.042	0.031	0.039	0.032	0.035	0.042	0.035	0.034	0.032	0.030
Max. Annual Average		0.005		0.008			0.006		0.005		0.005		0.004	0.005	0.005	0.005	0.005			0.004

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator			0.02	0.02	0.02	0.01	0.01	0.03	0.04	0.05	0.04	0.03	0.01	0.01	0.01	0.02	0.03	0.03	0.03	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00

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North Coast Air Basin

County: Del Norte

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)			0.055	0.051	0.064	0.064	0.061	0.059	0.058	0.055										
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)				0.042	0.046	0.044	0.051	0.050	0.051	0.049										
Peak 1-Hour Indicator (State)			0.059	0.057	0.066	0.066	0.064	0.062	0.059	0.061										
4th High 1-Hr. in 3 Yrs2			0.060	0.059	0.070	0.060	0.070	0.060	0.060	0.060										
Max. 8-Hr. Concentration		0.038	0.060	0.042	0.060	0.051	0.061	0.053	0.061	0.052										
Maximum 1-Hr. Concentration		0.040	0.068	0.050	0.070	0.060	0.070	0.060	0.064	0.056										
Days Above State 8-Hr. Std.		0	0	0	0	0	0	0	0	0										
Days Above Nat. 8-Hr. Std.		0	0	0	0	0	0	0	0	0										
Days Above State 1-Hr. Std.		0	0	0	0	0	0	0	0	0										

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)										41	42	58	50	42	46	48	39	37	44	31
Max. 24-Hr. Concentration (Nat)										41	42	58	48	39	44	46	39	39	42	30
Max. Annual Average (State)												20.8		18.4	17.6	17.3			18.6	
Max. Annual Average (Nat)										20.5	15.8	20.9	24.7	17.3	17.4	16.9	18.7	14.1	17.9	18.0
Calc Days Above State 24-Hr Std												6		0	0	0			0	
Calc Days Above Nat 24-Hr Std										0		0		0	0	0	0		0	

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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North Coast Air Basin

County: Humboldt

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)					0.036	0.042	0.042													
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)							0.034													
Peak 1-Hour Indicator (State)					0.041	0.048	0.048													
4th High 1-Hr. in 3 Yrs2					0.040	0.040	0.040													
Max. 8-Hr. Concentration					0.031	0.042	0.040													
Maximum 1-Hr. Concentration					0.040	0.050	0.040													
Days Above State 8-Hr. Std.					0	0	0													
Days Above Nat. 8-Hr. Std.					0	0	0													
Days Above State 1-Hr. Std.					0	0	0													

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				92	83				77	68	87	56	45	60	53	67	38	71	64	71
Max. 24-Hr. Concentration (Nat)			79	92	83				77	68	87	56	43	57	51	64	36	68	61	67
Max. Annual Average (State)				31.4	28.0				24.3		19.0	21.0	15.9	19.9	21.8	21.3				
Max. Annual Average (Nat)			15.5	31.4	28.0				24.3	19.9	18.4	21.2	14.8	19.2	20.9	20.8	18.5	17.8	20.7	13.6
Calc Days Above State 24-Hr Std				35	29				12		12	6	0	13	6	13				
Calc Days Above Nat 24-Hr Std				0	0				0	0	0	0	0	0	0	0	0		0	

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														36.9	24.0	32.6	23.7	36.1	25.6	31.8
Max. 24-Hr. Concentration (Nat)														36.9	24.0	32.6	23.7	36.1	25.6	31.8
98th Percentile of 24-Hr Conc.														27.7	21.5	29.0	22.6		23.1	
Annual Average (State)														9.1		9.4				
Avg. of Qtrly. Means (Nat)														9.1	9.1	9.4	7.9		8.2	

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator				4.6	4.6															
Max. 1-Hr. Concentration				10.0	9.0															
Max. 8-Hr. Concentration				4.5	3.5															
Days Above State 8-Hr. Std.				0	0															
Days Above Nat. 8-Hr. Std.				0	0															

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-56

North Coast Air Basin

County: Mendocino

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.063	0.073						0.060	0.063	0.064	0.064	0.062	0.065	0.068	0.067	0.065	0.065	0.067	0.068	0.064
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.052	0.056							0.050	0.056	0.052	0.050	0.052	0.058	0.058	0.055	0.055	0.057	0.058	0.057
Peak 1-Hour Indicator (State)	0.074	0.084						0.073	0.076	0.076	0.077	0.074	0.080	0.078	0.079	0.077	0.076	0.080	0.080	0.075
4th High 1-Hr. in 3 Yrs2	0.070	0.090						0.080	0.080	0.080	0.074	0.069	0.069	0.073	0.073	0.073	0.083	0.083	0.083	0.071
Max. 8-Hr. Concentration	0.062	0.076	0.076				0.043	0.065	0.061	0.065	0.049	0.061	0.071	0.069	0.059	0.055	0.072	0.066	0.056	0.060
Maximum 1-Hr. Concentration	0.070	0.090	0.090				0.060	0.080	0.087	0.084	0.058	0.071	0.090	0.079	0.071	0.070	0.092	0.090	0.070	0.088
Days Above State 8-Hr. Std.	0	2	3				0	0	0	0	0	0	1	0	0	0	2	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			101	82	60	74	51	54	62	54	56	66	52	69	51	64	72	67	45	49
Max. 24-Hr. Concentration (Nat)			101	82	60	74	51	54	62	54	56	66	50	66	49	61	74	65	44	46
Max. Annual Average (State)				29.7	23.7	25.4	21.9	23.2	21.9	26.0	24.4	23.4	22.1		23.5	25.4	22.9	22.2	20.6	18.6
Max. Annual Average (Nat)		19.8	27.1	29.9	23.7	25.3	21.8	22.6	23.9	26.1	24.6	23.4	21.1	24.3	22.4	24.1	22.2	21.4	19.8	17.9
Calc Days Above State 24-Hr Std				40	24	17	6	13	6	13	7	6	6		6	24	12	25	0	0
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														35.6	22.3	38.3	59.7	15.6	18.5	20.8
Max. 24-Hr. Concentration (Nat)														35.6	22.3	38.3	59.7	15.6	18.5	20.8
98th Percentile of 24-Hr Conc.														26.3		27.0	39.7	15.2	14.4	15.2
Annual Average (State)														8.8			9.1	7.4	7.0	6.2
Avg. of Qtrly. Means (Nat)														8.9		8.0	9.1	7.4	7.0	6.2

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.2							2.4		3.2	3.4	3.3	3.1	3.6	3.4	3.3	2.6	2.3	2.0	1.8
Max. 1-Hr. Concentration	6.0		1.0				1.0	6.0		5.4	4.8	7.4	4.8	5.2	4.4	4.0	3.1	5.3	2.3	2.6
Max. 8-Hr. Concentration	3.1		1.0				0.6	2.4		3.2	2.7	3.2	3.5	3.7	2.6	2.3	2.5	2.2	1.8	1.5
Days Above State 8-Hr. Std.	0		0				0	0		0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0		0				0	0		0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator								0.054	0.053	0.053	0.053	0.049	0.050	0.054	0.053	0.052	0.042	0.045	0.044	0.039
Max. 1-Hr. Concentration			0.030				0.080	0.050	0.079	0.078	0.044	0.061	0.052	0.066	0.042	0.052	0.080	0.053	0.037	0.037
Max. Annual Average									0.008	0.009		0.010	0.010	0.010	0.011	0.010	0.010	0.009	0.009	0.008

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator								0.01	0.01											
Max. Annual Average			0.00				0.00	0.00	0.00											
Max. 24-Hr. Concentration			0.01				0.01	0.00	0.00											

Table A-57

North Coast Air Basin

County: Sonoma

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)							0.070	0.074	0.072	0.075	0.074	0.082	0.091	0.096	0.093	0.081	0.071	0.070	0.069	0.065
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)									0.066	0.069	0.069	0.072	0.077	0.082	0.076	0.069	0.063	0.062	0.061	0.056
Peak 1-Hour Indicator (State)							0.085	0.088	0.088	0.088	0.086	0.091	0.104	0.110	0.106	0.093	0.083	0.082	0.082	0.077
4th High 1-Hr. in 3 Yrs2							0.080	0.090	0.090	0.090	0.090	0.090	0.110	0.110	0.110	0.100	0.080	0.080	0.080	0.080
Max. 8-Hr. Concentration							0.072	0.073	0.080	0.090	0.071	0.091	0.106	0.087	0.077	0.073	0.068	0.080	0.077	0.060
Maximum 1-Hr. Concentration							0.090	0.090	0.100	0.100	0.080	0.100	0.130	0.100	0.090	0.090	0.080	0.090	0.090	0.080
Days Above State 8-Hr. Std.							2	3	3	4	2	9	11	9	1	1	0	1	1	0
Days Above Nat. 8-Hr. Std.							0	0	0	1	0	1	5	2	0	0	0	0	0	0
Days Above State 1-Hr. Std.							0	0	1	1	0	2	7	4	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			62	85	266	78	58	53	57	43	40	54	33	74	45	63	37	45	33	39
Max. 24-Hr. Concentration (Nat)			62	85	266	78	58	53	57	43	40	54	32	71	44	59	36	45	33	37
Max. Annual Average (State)					23.8	24.8		20.7	18.4		16.4	16.5	16.6	19.4	12.6		15.6	15.1	15.7	14.1
Max. Annual Average (Nat)			21.3	24.7	23.8	25.1	21.4	20.3	18.4	13.7	16.5	16.5	16.0	18.3	14.7	15.0	15.0	14.8	15.2	13.9
Calc Days Above State 24-Hr Std					22	23		12	13		0	5	0	18	0		0	0	0	0
Calc Days Above Nat 24-Hr Std				0	6	0		0	0		0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-58

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

North Coast Air Basin

County: Trinity

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

No Monitoring Data Available

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)											63	54	47	95	51	72	53	54	43	32
Max. 24-Hr. Concentration (Nat)										41	72	54	46	100	51	73	52	57	42	32
Max. Annual Average (State)												17.8	18.1	24.3	18.8					
Max. Annual Average (Nat)										17.4	17.7	18.0	18.7	25.3	18.7	20.5	16.7	17.3	13.2	7.6
Calc Days Above State 24-Hr Std												6	0	36	7					
Calc Days Above Nat 24-Hr Std										0	0	0	0	0	0	0				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator		3.4																		
Max. 1-Hr. Concentration		4.0																		
Max. 8-Hr. Concentration		3.0																		
Days Above State 8-Hr. Std.		0																		
Days Above Nat. 8-Hr. Std.		0																		

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-59

Northeast Plateau Air Basin

County: Lassen

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

No Monitoring Data Available

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)											42	84	48	93	74	91				
Max. 24-Hr. Concentration (Nat)											42	84	52	100	80	105				
Max. Annual Average (State)																				
Max. Annual Average (Nat)											15.6	20.2	14.7	32.9	27.9	25.1				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-60

Northeast Plateau Air Basin

County: Modoc

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

No Monitoring Data Available

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)									101	78	74	97	41	89	74					
Max. 24-Hr. Concentration (Nat)									101	78	74	97	62	94	79	67				
Max. Annual Average (State)																				
Max. Annual Average (Nat)									29.6	30.3	16.2	17.3	14.2	26.3	22.4	19.8				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std										0				0	0	0				

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														40.0	38.0	35.0	5.0	10.0		
Max. 24-Hr. Concentration (Nat)														40.0	38.0	35.0	5.0	10.0		
98th Percentile of 24-Hr Conc.														27.0	37.0					
Annual Average (State)															8.5					
Avg. of Qtrly. Means (Nat)														7.9	8.5					

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-61

Northeast Plateau Air Basin

County: Siskiyou

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.074	0.077	0.076	0.076	0.076	0.077	0.073	0.069	0.069	0.065	0.066	0.068	0.071	0.071	0.072	0.070	0.074	0.075	0.075	0.074
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.064	0.069	0.069	0.069	0.067	0.059	0.057	0.051	0.058	0.057	0.059	0.058	0.061	0.062	0.063	0.053	0.055	0.057	0.065	0.064
Peak 1-Hour Indicator (State)	0.079	0.081	0.081	0.083	0.082	0.084	0.080	0.073	0.075	0.074	0.075	0.073	0.074	0.077	0.079	0.081	0.085	0.082	0.082	0.078
4th High 1-Hr. in 3 Yrs2	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070	0.070	0.070	0.070	0.070	0.078	0.077	0.081	0.082	0.082	0.087	0.081	0.077
Max. 8-Hr. Concentration	0.070	0.081	0.071	0.076	0.076	0.046	0.073	0.070	0.068	0.062	0.063	0.074	0.071	0.067	0.071	0.038	0.075	0.074	0.071	0.064
Maximum 1-Hr. Concentration	0.080	0.090	0.080	0.080	0.080	0.050	0.080	0.070	0.080	0.070	0.070	0.082	0.078	0.070	0.082	0.049	0.087	0.089	0.077	0.070
Days Above State 8-Hr. Std.	0	4	1	2	3	0	1	0	0	0	0	1	1	0	1	0	1	3	1	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				59	63	60	74	60	61	46	188	40	63	51	33	33	73	31	29	28
Max. 24-Hr. Concentration (Nat)				59	63	60	74	60	61	46	188	40	66	56	53	41	86	33	32	29
Max. Annual Average (State)				24.8			23.6		22.1	16.0				16.8			17.5	12.8	12.8	13.3
Max. Annual Average (Nat)				24.8	23.5	21.4	23.6	21.4	22.1	16.6	16.1	12.9	14.2	17.7	14.7	14.1	18.6	13.3	13.6	13.9
Calc Days Above State 24-Hr Std				29			24		0	0				0			6	0	0	0
Calc Days Above Nat 24-Hr Std				0	0		0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				26.0
Max. 24-Hr. Concentration (Nat)																				26.0
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration		12.0	4.0																	
Max. 8-Hr. Concentration		10.4	1.8																	
Days Above State 8-Hr. Std.		1	0																	
Days Above Nat. 8-Hr. Std.		1	0																	

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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Sacramento Valley Air Basin

County: Butte

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.091	0.093	0.092	0.094	0.092	0.087	0.086	0.085	0.088	0.089	0.089	0.082	0.082	0.090	0.100	0.099	0.099	0.099	0.100	0.092
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.078	0.082	0.081	0.082	0.080	0.077	0.076	0.075	0.078	0.078	0.077	0.072	0.072	0.077	0.081	0.081	0.089	0.089	0.088	0.083
Peak 1-Hour Indicator (State)	0.097	0.102	0.103	0.105	0.103	0.099	0.094	0.091	0.095	0.097	0.095	0.091	0.091	0.101	0.102	0.102	0.103	0.102	0.103	0.099
4th High 1-Hr. in 3 Yrs2	0.100	0.100	0.100	0.100	0.100	0.100	0.090	0.090	0.095	0.097	0.097	0.091	0.096	0.103	0.105	0.101	0.107	0.102	0.103	0.101
Max. 8-Hr. Concentration	0.087	0.088	0.092	0.087	0.095	0.085	0.077	0.083	0.091	0.086	0.084	0.072	0.090	0.100	0.095	0.089	0.101	0.091	0.094	0.085
Maximum 1-Hr. Concentration	0.110	0.110	0.100	0.100	0.130	0.100	0.090	0.100	0.099	0.105	0.108	0.087	0.106	0.135	0.105	0.101	0.112	0.101	0.103	0.092
Days Above State 8-Hr. Std.	28	30	25	18	16	9	20	15	46	11	17	1	10	30	43	39	66	45	37	31
Days Above Nat. 8-Hr. Std.	1	3	3	1	1	1	0	0	2	1	0	0	1	5	6	6	13	8	3	1
Days Above State 1-Hr. Std.	2	5	8	4	2	1	0	1	3	1	2	0	2	7	5	4	10	5	2	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			100	82			83	78	93	64	66	108	71	94	85	112	96	54	115	76
Max. 24-Hr. Concentration (Nat)			100	82			83	78	93	64	66	108	78	275	81	105	92	54	110	71
Max. Annual Average (State)								28.0	33.3	27.0	25.2	25.2	22.8	31.1	27.9	29.9	28.8	21.7	28.8	23.9
Max. Annual Average (Nat)			30.5	25.3			24.6	27.6	33.3	26.2	25.5	24.9	20.0	27.9	27.6	29.3	28.2	21.3	28.1	23.4
Calc Days Above State 24-Hr Std								46	36	37	16	21	18	49	39	31	37	6	30	29
Calc Days Above Nat 24-Hr Std								0	0	0	0	0	0	2	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													69.0	73.0	98.0	65.0	96.1	67.0	76.3	82.7
Max. 24-Hr. Concentration (Nat)													69.0	73.0	98.0	65.0	84.0	33.0	65.0	67.0
98th Percentile of 24-Hr Conc.													69.0	60.0	70.0	56.0	53.0	32.0	54.0	54.0
Annual Average (State)														17.5	15.8		15.1	15.9	16.5	13.8
Avg. of Qtrly. Means (Nat)														17.5	15.8	13.0	15.1	10.5	15.1	12.3

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	10.1	10.2	10.7	10.1	10.4	9.8	9.8	8.9	6.2	5.8	5.9	5.5	5.3	4.4	4.5	4.6	4.1	3.5	3.1	3.0
Max. 1-Hr. Concentration	20.0	12.0	17.0	15.0	17.0	15.0	14.0	9.0	9.4	8.5	8.7	7.0	6.0	7.2	5.2	6.4	5.1	3.9	3.6	3.3
Max. 8-Hr. Concentration	10.4	8.6	12.3	10.0	10.8	9.2	6.8	5.8	5.7	4.8	6.1	5.1	4.5	5.4	4.0	4.3	3.5	2.5	2.9	2.7
Days Above State 8-Hr. Std.	3	0	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	2	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.083	0.089	0.090	0.089	0.081	0.081	0.082	0.082	0.078	0.077	0.074	0.072	0.068	0.074	0.077	0.074	0.061	0.058	0.058	0.056
Max. 1-Hr. Concentration	0.080	0.090	0.100	0.080	0.080	0.070	0.080	0.090	0.080	0.074	0.070	0.061	0.068	0.077	0.078	0.062	0.058	0.057	0.056	0.048
Max. Annual Average	0.015	0.017	0.016	0.016	0.015		0.016	0.016	0.015	0.014	0.013	0.013	0.013	0.015	0.012	0.012	0.012	0.011	0.011	0.009

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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Sacramento Valley Air Basin

County: Colusa

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.095	0.101					0.094	0.097	0.094	0.097	0.098	0.091	0.089	0.087	0.084	0.090	0.088	0.087	0.078	0.075
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.085	0.085						0.079	0.082	0.082	0.081		0.077	0.076	0.075	0.077	0.076	0.075	0.069	0.067
Peak 1-Hour Indicator (State)	0.109	0.112					0.109	0.107	0.108	0.105	0.109	0.101	0.100	0.094	0.094	0.099	0.098	0.096	0.088	0.083
4th High 1-Hr. in 3 Yrs2	0.110	0.120					0.100	0.100	0.100	0.101	0.111	0.101	0.099	0.094	0.094	0.095	0.095	0.095	0.089	0.083
Max. 8-Hr. Concentration	0.088	0.102				0.084	0.092	0.085	0.090	0.090	0.091	0.081	0.088	0.085	0.072	0.088	0.081	0.071	0.073	0.074
Maximum 1-Hr. Concentration	0.110	0.120				0.100	0.110	0.100	0.107	0.106	0.111	0.093	0.099	0.095	0.092	0.101	0.094	0.089	0.084	0.085
Days Above State 8-Hr. Std.	37	68				5	34	14	36	21	30	13	13	15	5	23	10	1	1	2
Days Above Nat. 8-Hr. Std.	5	21				0	3	2	2	2	4	0	1	1	0	3	0	0	0	0
Days Above State 1-Hr. Std.	12	28				1	8	3	4	6	6	0	2	1	0	5	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			98	72	93	102	84	70	57	93	57	57	59	172	55	76	64	69	81	92
Max. 24-Hr. Concentration (Nat)			98	72	93	102	84	83	204	198	90	112	93	171	109	74	102	74	81	91
Max. Annual Average (State)				29.8	31.3		29.9	25.0	28.9			25.1	20.0			25.2				25.5
Max. Annual Average (Nat)			29.4	29.8	30.9	38.4	28.7	28.6	30.1	40.7	32.6	21.8	19.4	33.5	25.8	27.7	29.1	23.0	18.5	23.8
Calc Days Above State 24-Hr Std				35	35		42	20	26			12	6			7				26
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	1	6		0	0	6	0	0	0	0		0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													37.0	55.0	28.0	36.0	57.0	30.0	44.6	47.2
Max. 24-Hr. Concentration (Nat)													37.0	55.0	28.0	36.0	57.0	30.0	38.0	34.0
98th Percentile of 24-Hr Conc.															26.0	31.0		27.0	34.0	16.0
Annual Average (State)																9.6			7.3	11.2
Avg. of Qtrly. Means (Nat)															8.0	9.6		8.0	7.3	7.0

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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Sacramento Valley Air Basin

County: Glenn

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.091	0.095			0.091	0.093	0.093	0.093	0.092	0.089	0.088	0.088	0.084	0.089	0.088	0.089	0.083	0.083	0.078	0.077
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.080	0.084					0.081	0.080	0.076		0.079	0.077	0.076	0.078	0.077	0.077	0.074	0.073	0.070	0.067
Peak 1-Hour Indicator (State)	0.101	0.108			0.102	0.104	0.101	0.103	0.101	0.099	0.098	0.097	0.093	0.097	0.097	0.096	0.092	0.091	0.088	0.085
4th High 1-Hr. in 3 Yrs2	0.100	0.110			0.100	0.100	0.100	0.100	0.100	0.099	0.098	0.092	0.095	0.097	0.097	0.096	0.088	0.088	0.087	0.086
Max. 8-Hr. Concentration	0.083	0.097			0.086	0.082	0.088	0.083	0.086	0.087	0.081	0.080	0.088	0.093	0.078	0.084	0.077	0.079	0.070	0.070
Maximum 1-Hr. Concentration	0.100	0.120			0.100	0.100	0.110	0.100	0.099	0.103	0.098	0.096	0.098	0.101	0.086	0.094	0.093	0.090	0.084	0.077
Days Above State 8-Hr. Std.	28	40			21	9	42	17	32	27	19	11	10	26	7	18	9	8	1	1
Days Above Nat. 8-Hr. Std.	0	8			1	0	4	0	2	1	0	0	1	2	0	0	0	0	0	0
Days Above State 1-Hr. Std.	2	9			3	1	6	1	3	1	1	1	2	4	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			93	73	63	81	111	75	80	88	75	72	55	88	65	68	80	61	138	69
Max. 24-Hr. Concentration (Nat)			93	73	63	81	111	75	101	91	80	72	104	135	76	81	84	89	135	67
Max. Annual Average (State)				27.1	28.8	33.0	28.9	23.1		29.0	24.5	22.8	20.3		23.4		29.1	20.4	25.6	21.5
Max. Annual Average (Nat)			32.8	27.1	28.0	32.3	28.4	23.1	28.3	29.0	25.2	22.4	19.6	27.5	21.9	24.6	27.4	22.5	25.2	21.1
Calc Days Above State 24-Hr Std				18	23	83	46	16		57	29	10	12		6		41	18	24	18
Calc Days Above Nat 24-Hr Std				0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																			54.2	45.1
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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Sacramento Valley Air Basin

County: Placer

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.126	0.126	0.125	0.127	0.127	0.125	0.126	0.121	0.120	0.122	0.120	0.115	0.115	0.116	0.120	0.118	0.119	0.116	0.110	0.103
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.109	0.105	0.108	0.105	0.107	0.105	0.105	0.101	0.103	0.105	0.103	0.095	0.095	0.097	0.102	0.101	0.101	0.099	0.095	0.092
Peak 1-Hour Indicator (State)	0.153	0.148	0.153	0.148	0.150	0.138	0.146	0.139	0.142	0.135	0.138	0.134	0.137	0.129	0.134	0.125	0.131	0.128	0.123	0.114
4th High 1-Hr. in 3 Yrs2	0.160	0.150	0.160	0.150	0.150	0.150	0.160	0.150	0.140	0.134	0.131	0.131	0.131	0.133	0.142	0.127	0.129	0.126	0.126	0.117
Max. 8-Hr. Concentration	0.123	0.121	0.120	0.097	0.127	0.115	0.122	0.120	0.117	0.119	0.110	0.096	0.119	0.113	0.107	0.107	0.115	0.111	0.101	0.107
Maximum 1-Hr. Concentration	0.170	0.180	0.180	0.120	0.150	0.130	0.170	0.150	0.133	0.148	0.135	0.113	0.153	0.142	0.128	0.128	0.136	0.133	0.118	0.120
Days Above State 8-Hr. Std.	68	87	106	60	95	73	82	52	82	60	74	31	60	74	60	57	60	49	56	44
Days Above Nat. 8-Hr. Std.	36	37	43	13	41	29	34	17	27	21	26	4	20	27	19	26	16	12	12	15
Days Above State 1-Hr. Std.	45	41	55	23	42	36	46	23	35	35	33	10	23	28	25	32	25	17	15	17

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)						55	48	52	65	84	98	66	75	89	62	62	61	59	43	58
Max. 24-Hr. Concentration (Nat)						55	48	52	65	84	98	66	70	93	58	59	93	58	43	55
Max. Annual Average (State)								21.4	25.3	24.1	20.9	22.1	23.0	26.7	24.5	24.7	25.2	21.3	22.1	19.6
Max. Annual Average (Nat)		38.2				7.1	17.4	24.3	25.0	27.3	23.6	21.8	22.3	26.1	23.9	24.2	24.6	21.0	21.6	19.1
Calc Days Above State 24-Hr Std								0	16	7	0	0	18	31	11	24	6	6	0	6
Calc Days Above Nat 24-Hr Std								0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													63.0	79.0	51.0	49.0	53.0	30.0	47.8	59.2
Max. 24-Hr. Concentration (Nat)													63.0	79.0	51.0	49.0	53.0	30.0	32.0	51.0
98th Percentile of 24-Hr Conc.														40.0	43.0	49.0	40.0	26.0	30.0	47.0
Annual Average (State)														13.4	12.2	11.9	13.2	9.9	9.4	10.7
Avg. of Qtrly. Means (Nat)														13.4	12.2	11.9	13.2	9.9	9.4	10.7

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator							2.3	2.6	2.9	2.6	2.5	2.2	2.3	2.3	2.4	2.3	2.2	2.0	1.8	1.5
Max. 1-Hr. Concentration						4.0	9.0	6.0	4.7	3.9	4.5	3.7	4.2	3.9	3.2	3.1	4.6	2.4	2.6	2.0
Max. 8-Hr. Concentration						3.3	2.3	2.8	3.0	2.2	2.8	2.2	2.4	2.2	2.4	1.9	2.8	1.6	1.9	1.3
Days Above State 8-Hr. Std.						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator							0.090	0.088	0.090	0.096	0.098	0.095	0.091	0.092	0.091	0.090	0.085	0.087	0.086	0.082
Max. 1-Hr. Concentration						0.050	0.080	0.090	0.089	0.093	0.100	0.080	0.097	0.093	0.082	0.086	0.075	0.083	0.067	0.079
Max. Annual Average							0.015	0.016	0.018	0.017	0.016	0.015	0.016	0.012	0.016	0.015	0.016	0.014	0.013	0.013

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-66

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento Valley Air Basin

County: Sacramento

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.139	0.132	0.134	0.133	0.132	0.128	0.129	0.130	0.121	0.123	0.126	0.120	0.130	0.128	0.122	0.116	0.115	0.115	0.117	0.116
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.118	0.114	0.114	0.114	0.101	0.100	0.101	0.110	0.104	0.106	0.106	0.097	0.095	0.101	0.105	0.099	0.100	0.100	0.097	0.097
Peak 1-Hour Indicator (State)	0.170	0.164	0.168	0.163	0.162	0.153	0.158	0.159	0.151	0.148	0.152	0.138	0.159	0.154	0.152	0.139	0.135	0.137	0.133	0.131
4th High 1-Hr. in 3 Yrs2	0.180	0.160	0.160	0.160	0.160	0.150	0.150	0.150	0.142	0.145	0.145	0.143	0.149	0.149	0.149	0.138	0.134	0.138	0.138	0.131
Max. 8-Hr. Concentration	0.125	0.127	0.130	0.133	0.108	0.140	0.122	0.118	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.094	0.117
Maximum 1-Hr. Concentration	0.160	0.170	0.170	0.170	0.150	0.190	0.150	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.114	0.134
Days Above State 8-Hr. Std.	64	103	103	86	48	83	75	41	53	54	70	41	51	60	50	62	66	70	51	45
Days Above Nat. 8-Hr. Std.	36	53	58	32	20	45	35	14	24	32	29	9	29	26	26	23	28	30	12	21
Days Above State 1-Hr. Std.	48	74	86	61	29	55	52	26	36	39	49	21	42	40	31	31	39	40	20	29

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			99	147	153	134	89	113	99	90	86	108	114	141	90	96	91	123	87	109
Max. 24-Hr. Concentration (Nat)			99	139	153	134	89	110	99	287	86	112	104	144	86	123	145	75	102	110
Max. Annual Average (State)				41.9			31.2	29.4	29.1	28.0	25.6	23.5	23.3	29.7	25.9		27.6	28.8	25.4	30.4
Max. Annual Average (Nat)			30.1	41.9	51.9	42.3	31.1	31.5	30.2	26.1	26.3	25.1	27.0	33.1	26.7	26.5	29.9	28.4	24.6	27.2
Calc Days Above State 24-Hr Std				82			34	43	23	42	24	12	18	49	36		30	25	6	42
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													96.0	108.0	123.1	128.2	91.0	73.2	58.2	81.4
Max. 24-Hr. Concentration (Nat)													96.0	108.0	81.0	78.0	91.0	65.0	51.0	80.0
98th Percentile of 24-Hr Conc.													96.0	84.0	81.0	78.0	77.0	43.0	42.0	49.0
Annual Average (State)															12.3			12.2	11.5	12.5
Avg. of Qtrly. Means (Nat)														17.0	12.3		14.3	12.2	11.5	11.5

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2	4.4
Max. 1-Hr. Concentration	20.0	15.0	15.0	18.0	16.0	15.0	12.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	6.7	7.8	8.5	7.3	8.0
Max. 8-Hr. Concentration	13.9	10.0	11.6	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1	4.2
Days Above State 8-Hr. Std.	12	5	11	22	14	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	11	3	8	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.094	0.086	0.107	0.097	0.095	0.084	0.089	0.091	0.084
Max. 1-Hr. Concentration	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.102	0.090	0.102	0.146	0.074
Max. Annual Average	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.015	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017	0.016

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03		0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Max. Annual Average	0.00		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01		0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00

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Sacramento Valley Air Basin

County: Shasta

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.106	0.109	0.111	0.108	0.113	0.108	0.106	0.103	0.105	0.100	0.106	0.104	0.116	0.114	0.114	0.100	0.092	0.103	0.098	0.095
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.080	0.091	0.088	0.085	0.073	0.072	0.090	0.083	0.084	0.080	0.087	0.086	0.095	0.095	0.093	0.082	0.078	0.073	0.075	0.084
Peak 1-Hour Indicator (State)	0.116	0.121	0.122	0.119	0.130	0.120	0.117	0.112	0.114	0.107	0.117	0.118	0.131	0.130	0.129	0.112	0.103	0.122	0.114	0.110
4th High 1-Hr. in 3 Yrs2	0.120	0.130	0.130	0.130	0.130	0.130	0.120	0.110	0.111	0.111	0.111	0.110	0.140	0.140	0.140	0.111	0.098	0.108	0.114	0.108
Max. 8-Hr. Concentration	0.097	0.108	0.105	0.083	0.110	0.095	0.091	0.088	0.105	0.084	0.100	0.107	0.126	0.098	0.087	0.079	0.084	0.096	0.096	0.089
Maximum 1-Hr. Concentration	0.120	0.130	0.120	0.090	0.130	0.110	0.110	0.110	0.113	0.099	0.110	0.118	0.140	0.116	0.102	0.087	0.097	0.113	0.131	0.105
Days Above State 8-Hr. Std.	41	57	25	18	30	40	31	10	44	24	41	37	82	62	26	19	21	24	38	19
Days Above Nat. 8-Hr. Std.	9	21	3	0	13	11	10	1	8	0	14	6	45	12	1	0	0	6	2	3
Days Above State 1-Hr. Std.	8	25	5	0	13	12	10	1	7	3	16	8	40	23	3	0	4	9	3	3

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				91	80	83	86	91	64	55	51	63	61	81	53	71	58	52	74	50
Max. 24-Hr. Concentration (Nat)				91	80	83	86	91	64	55	51	63	61	81	49	66	60	53	76	47
Max. Annual Average (State)						28.7		20.1	24.4	25.1	24.3		23.4		24.3	24.1	20.8	21.7	23.6	22.3
Max. Annual Average (Nat)				33.2	27.7	31.5	23.1	36.9	26.7	25.2	24.3	22.2	23.5	23.7	23.7	23.7	25.9	21.5	23.5	22.3
Calc Days Above State 24-Hr Std						50		7	12	13	6		18		6	6	6	12	6	0
Calc Days Above Nat 24-Hr Std					0	0		0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													50.0	57.0	45.0	49.0	40.0	34.0	26.0	20.0
Max. 24-Hr. Concentration (Nat)													50.0	57.0	45.0	49.0	40.0	34.0	26.0	20.0
98th Percentile of 24-Hr Conc.														55.0		29.0	38.0	16.0	18.0	19.0
Annual Average (State)														12.9		9.2		7.5		7.3
Avg. of Qtrly. Means (Nat)														12.9		9.2	10.5	7.5	7.2	7.3

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	3.1	3.1		2.4	2.3	2.3	2.7	2.0	2.0											
Max. 1-Hr. Concentration	5.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	4.5											
Max. 8-Hr. Concentration	2.8	2.5	1.8	2.5	2.3	2.0	1.9	2.1	1.7											
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0											
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0											

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.091	0.093	0.093	0.090	0.081	0.069	0.069													
Max. 1-Hr. Concentration	0.090	0.100	0.100	0.080	0.070	0.070	0.050													
Max. Annual Average		0.015				0.012														

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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Sacramento Valley Air Basin

County: Solano

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.075	0.098	0.099	0.098	0.094					0.093	0.096	0.094	0.102	0.106	0.106	0.096	0.086	0.088	0.087	0.087
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.055	0.066	0.079	0.082	0.075							0.076	0.082	0.085	0.085	0.077	0.072	0.068		0.071
Peak 1-Hour Indicator (State)	0.093	0.113	0.109	0.110	0.102					0.120	0.115	0.116	0.118	0.124	0.123	0.113	0.101	0.103	0.099	0.099
4th High 1-Hr. in 3 Yrs2	0.090	0.110	0.110	0.120	0.110					0.115	0.117	0.115	0.123	0.123	0.123	0.110	0.100	0.096	0.095	0.095
Max. 8-Hr. Concentration	0.066	0.102	0.088	0.101	0.088					0.090	0.101	0.083	0.101	0.106	0.081	0.081	0.077	0.081	0.087	0.080
Maximum 1-Hr. Concentration	0.090	0.120	0.100	0.120	0.110					0.115	0.126	0.105	0.137	0.139	0.100	0.104	0.100	0.094	0.101	0.101
Days Above State 8-Hr. Std.	0	22	18	6	3					7	24	5	28	22	5	5	6	7	3	5
Days Above Nat. 8-Hr. Std.	0	8	2	1	1					3	2	0	7	8	0	0	0	0	1	0
Days Above State 1-Hr. Std.	0	12	2	4	1					6	8	3	10	8	2	2	1	0	1	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			81	109	96	98	70	53	76	62	45	74	62	68	50	82	66	42	44	35
Max. 24-Hr. Concentration (Nat)			81	109	96	98	70	53	76	62	45	74	56	66	47	77	63	40	44	33
Max. Annual Average (State)							24.4		21.2	18.9	17.3	16.1	17.7	20.5	19.0	20.8	19.9	16.0	18.7	16.4
Max. Annual Average (Nat)			24.3	46.0	21.0	40.6	24.4	22.4	21.2	19.0	17.3	16.1	17.2	19.8	18.3	20.2	19.4	15.7	18.2	16.1
Calc Days Above State 24-Hr Std							24		18	13	0	6	6	18	0	12	6	0	0	0
Calc Days Above Nat 24-Hr Std							0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration			4.0																	
Max. 8-Hr. Concentration			1.8																	
Days Above State 8-Hr. Std.			0																	
Days Above Nat. 8-Hr. Std.			0																	

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-69

A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sacramento Valley Air Basin

County: Sutter

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.109	0.107	0.108	0.107	0.100	0.095	0.102	0.114	0.109	0.110	0.107	0.106	0.106	0.104	0.104	0.100	0.103	0.109	0.108	0.097
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.092	0.093	0.095	0.091	0.082	0.076	0.082	0.082	0.085	0.096	0.096	0.091	0.091	0.089	0.089	0.083	0.084	0.088	0.090	0.083
Peak 1-Hour Indicator (State)	0.125	0.120	0.128	0.123	0.121	0.105	0.111	0.125	0.123	0.120	0.115	0.114	0.120	0.116	0.115	0.108	0.113	0.121	0.119	0.106
4th High 1-Hr. in 3 Yrs2	0.130	0.140	0.140	0.140	0.120	0.100	0.110	0.120	0.120	0.115	0.115	0.109	0.124	0.124	0.124	0.106	0.117	0.117	0.117	0.113
Max. 8-Hr. Concentration	0.103	0.107	0.103	0.087	0.083	0.095	0.108	0.108	0.100	0.103	0.102	0.092	0.102	0.097	0.092	0.093	0.103	0.099	0.089	0.083
Maximum 1-Hr. Concentration	0.140	0.140	0.150	0.100	0.110	0.110	0.120	0.140	0.115	0.126	0.116	0.105	0.124	0.115	0.108	0.116	0.117	0.117	0.100	0.096
Days Above State 8-Hr. Std.	48	63	77	22	13	28	69	37	88	54	81	25	53	62	33	28	38	38	24	20
Days Above Nat. 8-Hr. Std.	12	16	32	2	0	2	13	9	18	17	28	3	14	11	5	3	11	6	1	0
Days Above State 1-Hr. Std.	21	23	41	4	2	10	29	13	25	21	28	5	16	21	9	6	15	10	2	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				103	96	108	79	78	154	128	82	98	63	151	70	82	75	83	53	60
Max. 24-Hr. Concentration (Nat)				103	96	108	79	78	154	128	82	98	60	168	70	80	74	81	53	59
Max. Annual Average (State)					38.5	39.2	35.2	31.2			29.9	28.8	24.5	39.4		30.5	31.8	26.4		25.0
Max. Annual Average (Nat)				37.9	38.5	38.5	34.3	30.7	34.5	30.4	29.8	28.6	23.8	22.7	27.9	30.2	30.9	26.0	20.0	24.7
Calc Days Above State 24-Hr Std					74	104	61	43			27	22	30	62		50	25	31		31
Calc Days Above Nat 24-Hr Std					0	0	0	0	0		0	0	0	2	0	0	0	0		0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)													69.0	58.0	44.0	56.0	62.0	32.0	41.0	47.2
Max. 24-Hr. Concentration (Nat)													69.0	58.0	44.0	56.0	62.0	32.0	39.0	45.0
98th Percentile of 24-Hr Conc.													69.0	53.0	38.0	54.0	35.0	29.0	38.0	42.0
Annual Average (State)														15.9	11.2	11.9	13.1	9.4	10.1	10.2
Avg. of Qtrly. Means (Nat)															10.6	11.9		9.4	10.1	9.5

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator						10.2	8.1	5.8	5.7	5.2	4.8	4.6	4.4	4.4	4.4	4.6	4.2	3.6	3.1	2.8
Max. 1-Hr. Concentration						12.0	9.0	10.0	8.8	7.5	7.7	6.1	7.3	7.2	6.1	17.2	6.4	4.3	5.8	4.4
Max. 8-Hr. Concentration						8.5	6.3	7.3	6.1	4.7	4.7	4.1	4.9	4.4	3.6	3.9	3.5	2.4	2.5	3.4
Days Above State 8-Hr. Std.						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator						0.108	0.089	0.088	0.086	0.083	0.079	0.077	0.075	0.081	0.079	0.082	0.075	0.078	0.075	0.071
Max. 1-Hr. Concentration						0.100	0.090	0.090	0.075	0.074	0.068	0.073	0.074	0.085	0.072	0.079	0.068	0.080	0.066	0.062
Max. Annual Average							0.017	0.017	0.016	0.013	0.012	0.014	0.013	0.014			0.015	0.014	0.012	0.012

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-70

Sacramento Valley Air Basin

County: Tehama

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)					0.111	0.103	0.100	0.097	0.097	0.100	0.093	0.091	0.099	0.107	0.109	0.105	0.094	0.095	0.095	0.091
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)							0.089	0.086	0.086	0.086		0.083	0.086	0.091	0.091	0.086	0.083	0.084	0.085	0.082
Peak 1-Hour Indicator (State)					0.120	0.115	0.113	0.106	0.104	0.108	0.102	0.099	0.107	0.114	0.115	0.111	0.100	0.106	0.103	0.098
4th High 1-Hr. in 3 Yrs2					0.120	0.110	0.110	0.100	0.100	0.100	0.108	0.101	0.120	0.120	0.120	0.114	0.101	0.101	0.101	0.099
Max. 8-Hr. Concentration					0.100	0.085	0.091	0.093	0.087	0.103	0.084	0.093	0.112	0.108	0.088	0.085	0.095	0.088	0.089	0.086
Maximum 1-Hr. Concentration					0.120	0.110	0.100	0.100	0.100	0.110	0.108	0.101	0.120	0.128	0.095	0.094	0.109	0.102	0.097	0.098
Days Above State 8-Hr. Std.					37	38	39	18	25	40	43	27	62	73	33	31	44	40	51	36
Days Above Nat. 8-Hr. Std.					11	2	9	4	3	9	0	2	11	20	2	1	7	3	2	2
Days Above State 1-Hr. Std.					15	6	9	5	2	10	4	2	12	18	2	0	7	6	2	2

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				68	67	85	75	67	74	63	56	58	118	99	49	73	71	58	57	43
Max. 24-Hr. Concentration (Nat)				68	67	85	75	67	74	63	56	58	119	98	49	71	69	58	57	41
Max. Annual Average (State)				31.4	29.7	32.4	29.3	24.9											25.0	
Max. Annual Average (Nat)				31.4	29.7	32.5	29.3	25.0	30.0	25.2	20.6	22.5	23.6	28.8	23.6	26.2	30.5	22.6	24.5	21.9
Calc Days Above State 24-Hr Std				42	24	67	30	18											12	
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0			0			0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-71

Sacramento Valley Air Basin

County: Yolo

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)					0.111	0.103	0.100	0.097	0.097	0.100	0.093	0.091	0.099	0.107	0.109	0.105	0.094	0.095	0.095	0.091
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)							0.089	0.086	0.086	0.086		0.083	0.086	0.091	0.091	0.086	0.083	0.084	0.085	0.082
Peak 1-Hour Indicator (State)					0.120	0.115	0.113	0.106	0.104	0.108	0.102	0.099	0.107	0.114	0.115	0.111	0.100	0.106	0.103	0.098
4th High 1-Hr. in 3 Yrs2					0.120	0.110	0.110	0.100	0.100	0.100	0.108	0.101	0.120	0.120	0.120	0.114	0.101	0.101	0.101	0.099
Max. 8-Hr. Concentration					0.100	0.085	0.091	0.093	0.087	0.103	0.084	0.093	0.112	0.108	0.088	0.085	0.095	0.088	0.089	0.086
Maximum 1-Hr. Concentration					0.120	0.110	0.100	0.100	0.100	0.110	0.108	0.101	0.120	0.128	0.095	0.094	0.109	0.102	0.097	0.098
Days Above State 8-Hr. Std.					37	38	39	18	25	40	43	27	62	73	33	31	44	40	51	36
Days Above Nat. 8-Hr. Std.					11	2	9	4	3	9	0	2	11	20	2	1	7	3	2	2
Days Above State 1-Hr. Std.					15	6	9	5	2	10	4	2	12	18	2	0	7	6	2	2

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)					147	136	106	96	98	145	77	126	130	179	85	101	87	70	171	66
Max. 24-Hr. Concentration (Nat)					147	136	106	96	98	145	77	126	130	179	79	95	82	69	169	63
Max. Annual Average (State)							34.7	30.5		29.9	27.5	27.7	29.9	33.3	26.6	28.2	28.0		35.2	24.2
Max. Annual Average (Nat)					36.7	46.4	42.3	31.8	29.8	36.8	27.5	27.6	29.0	32.5	25.7	27.4	27.2	23.4	34.5	23.7
Calc Days Above State 24-Hr Std							70	63		43	44	12	60	64	43	30	37		80	30
Calc Days Above Nat 24-Hr Std							0	0	0	0	0	0	0	7	0	0	0	0	6	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														70.0	46.0	57.0	69.0	41.7	49.5	59.5
Max. 24-Hr. Concentration (Nat)														70.0	46.0	57.0	69.0	31.0	36.0	35.0
98th Percentile of 24-Hr Conc.															38.0		31.0	28.0	31.0	24.0
Annual Average (State)															10.3			8.4	10.4	
Avg. of Qtrly. Means (Nat)														16.3	10.3		10.7	8.4	10.4	8.4

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	4.4	4.6	4.6	4.6	4.9	5.2	3.8	3.8			1.4	1.7	1.5	1.4	1.2	1.2	1.3	1.1	1.1	0.9
Max. 1-Hr. Concentration	13.0	14.0	9.0	13.0	12.0	7.0	7.0	6.0	10.0	5.3	2.4	2.8	2.5	2.4	2.5	15.1	1.9	3.3	1.6	0.9
Max. 8-Hr. Concentration	6.0	8.4	4.9	5.4	5.0	3.5	3.9	3.4	6.6	3.1	1.8	1.8	1.1	1.4	1.3	2.5	1.4	0.8	1.0	0.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator											0.064	0.061	0.064	0.069	0.069	0.082	0.075	0.076	0.060	0.052
Max. 1-Hr. Concentration											0.061	0.057	0.060	0.073	0.053	0.172	0.059	0.060	0.057	0.043
Max. Annual Average												0.010	0.011	0.012	0.011	0.010	0.012	0.011	0.009	0.009

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-72

Sacramento Valley Air Basin

County: Yuba

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)																				
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)																				
Peak 1-Hour Indicator (State)																				
4th High 1-Hr. in 3 Yrs2																				
Max. 8-Hr. Concentration																				
Maximum 1-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				
Days Above State 1-Hr. Std.																				

No Monitoring Data Available

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			96	113	80	102														
Max. 24-Hr. Concentration (Nat)			96	113	80	102														
Max. Annual Average (State)					31.1															
Max. Annual Average (Nat)			51.2	30.9	31.3	38.2														
Calc Days Above State 24-Hr Std					43															
Calc Days Above Nat 24-Hr Std					0															

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-73

Salton Sea Air Basin

County: Imperial

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.109	0.078	0.089	0.092	0.094	0.088	0.116	0.119	0.119	0.121	0.120	0.119	0.115	0.114	0.103	0.107	0.103	0.101	0.097	0.098
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.055		0.073	0.075	0.076	0.075	0.079	0.095	0.104	0.105	0.103	0.103	0.093	0.091	0.089	0.092	0.087	0.087	0.085	0.084
Peak 1-Hour Indicator (State)	0.132	0.092	0.107	0.107	0.113	0.109	0.150	0.156	0.154	0.164	0.157	0.155	0.145	0.149	0.149	0.153	0.142	0.129	0.120	0.115
4th High 1-Hr. in 3 Yrs2	0.130	0.090	0.110	0.110	0.110	0.110	0.170	0.170	0.150	0.205	0.192	0.180	0.150	0.150	0.157	0.166	0.147	0.142	0.121	0.121
Max. 8-Hr. Concentration	0.080	0.081	0.098	0.088	0.082	0.135	0.117	0.128	0.116	0.116	0.117	0.120	0.104	0.110	0.113	0.112	0.104	0.097	0.090	0.100
Maximum 1-Hr. Concentration	0.090	0.090	0.120	0.110	0.110	0.180	0.150	0.210	0.180	0.232	0.180	0.160	0.236	0.171	0.169	0.167	0.156	0.144	0.124	0.122
Days Above State 8-Hr. Std.	4	3	26	7	4	19	79	91	131	103	87	140	85	94	23	55	55	45	39	64
Days Above Nat. 8-Hr. Std.	0	0	3	1	0	3	24	24	47	49	34	50	18	20	5	18	13	8	1	13
Days Above State 1-Hr. Std.	0	0	17	4	6	9	46	50	75	83	69	69	44	65	20	41	29	23	10	20

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			368	676	258	243	103	175	258	229	359	532	181	238	279	634	361	848	195	220
Max. 24-Hr. Concentration (Nat)			368	676	258	243	103	175	258	229	359	532	185	227	268	647	373	840	201	211
Max. Annual Average (State)				77.9	57.0	57.0	47.5	52.6		72.0	73.6	77.7	66.6	79.0	84.8	87.1	80.9	79.7	60.3	52.7
Max. Annual Average (Nat)			61.8	77.9	57.3	58.9	47.5	53.3	75.1	71.9	73.6	77.7	74.1	77.8	95.2	86.2	79.9	80.0	60.8	53.2
Calc Days Above State 24-Hr Std				221	197	182	143	144		218	244	294	227	289	313	312	305	284	220	160
Calc Days Above Nat 24-Hr Std				27	12	7	0	13	0	13	30	12	12	32	38	18	18	25	6	6

** PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														52.5	84.2	60.2	142.7	153.6	76.0	85.2
Max. 24-Hr. Concentration (Nat)														52.5	84.2	60.2	46.5	65.1	74.2	67.6
98th Percentile of 24-Hr Conc.														39.5	56.0		44.1	21.0	31.9	22.1
Annual Average (State)																	15.1		16.1	15.5
Avg. of Qtrly. Means (Nat)														15.2	16.9		15.1	9.2	11.8	9.1

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator									17.4	18.8	17.8	17.4	15.5	15.5	14.8	14.3	12.8	11.5	10.5	8.4
Max. 1-Hr. Concentration									30.6	32.0	27.0	24.0	23.5	22.9	19.9	17.4	15.6	11.8	12.6	12.4
Max. 8-Hr. Concentration									13.1	22.9	22.1	17.8	14.4	17.9	15.5	12.3	11.6	8.8	10.3	9.0
Days Above State 8-Hr. Std.									10	17	11	15	12	13	8	6	4	0	1	0
Days Above Nat. 8-Hr. Std.									9	15	9	10	8	11	6	6	3	0	1	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator									0.153	0.182	0.178	0.178	0.150	0.145	0.170	0.161	0.153	0.147	0.128	0.113
Max. 1-Hr. Concentration									0.227	0.217	0.164	0.128	0.257	0.286	0.192	0.139	0.138	0.189	0.108	0.131
Max. Annual Average										0.016	0.014			0.018			0.013	0.013	0.015	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator											0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.00	0.00	0.00
Max. Annual Average									0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration									0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00

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Salton Sea Air Basin

County: Riverside

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.160	0.155	0.146	0.148	0.146	0.146	0.140	0.136	0.132	0.130	0.128	0.126	0.128	0.118	0.116	0.114	0.123	0.124	0.121	0.120
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.135	0.131	0.130	0.129	0.126	0.125	0.121	0.118	0.113	0.110	0.111	0.107	0.107	0.100	0.099	0.100	0.105	0.108	0.104	0.104
Peak 1-Hour Indicator (State)	0.196	0.184	0.182	0.180	0.181	0.175	0.168	0.159	0.162	0.160	0.154	0.152	0.153	0.143	0.138	0.130	0.136	0.136	0.132	0.131
4th High 1-Hr. in 3 Yrs2	0.190	0.180	0.180	0.180	0.180	0.180	0.170	0.170	0.152	0.158	0.158	0.152	0.155	0.143	0.133	0.128	0.132	0.133	0.131	0.130
Max. 8-Hr. Concentration	0.142	0.141	0.137	0.160	0.130	0.148	0.128	0.126	0.130	0.132	0.125	0.117	0.136	0.107	0.104	0.113	0.124	0.110	0.106	0.116
Maximum 1-Hr. Concentration	0.180	0.170	0.200	0.190	0.170	0.180	0.170	0.170	0.165	0.160	0.160	0.155	0.173	0.126	0.124	0.137	0.136	0.141	0.125	0.139
Days Above State 8-Hr. Std.	105	116	122	143	107	110	105	113	102	86	99	79	68	80	92	103	104	94	101	87
Days Above Nat. 8-Hr. Std.	62	72	70	90	56	62	66	64	39	34	52	26	31	23	30	43	50	46	37	39
Days Above State 1-Hr. Std.	80	85	99	117	82	80	82	82	78	56	61	45	42	33	43	56	54	60	46	43

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			115	712	520	340	175	125	97	199	215	182	158	119	201	604	276	302	161	106
Max. 24-Hr. Concentration (Nat)			115	712	520	340	175	125	97	199	215	182	158	119	201	604	276	309	161	106
Max. Annual Average (State)				44.6	80.3	69.1	43.8	46.4	48.3	52.0	55.2		48.4	28.9	55.4	59.0	53.9	56.1	40.6	45.4
Max. Annual Average (Nat)			47.6	89.9	80.3	69.3	43.1	46.5	48.3	52.3	55.6	53.9	48.1	52.7	55.2	59.5	53.8	56.7	40.2	44.9
Calc Days Above State 24-Hr Std				104	254	230	115	151	136	162	189		146	19	183	171	174	158	74	122
Calc Days Above Nat 24-Hr Std				26	26	19	6	0	0	7	13	13	3	0	9	18	9	9	3	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														29.6	28.6	44.7	42.3	26.8	28.5	44.3
Max. 24-Hr. Concentration (Nat)														29.6	28.6	44.7	42.3	26.8	28.5	44.3
98th Percentile of 24-Hr Conc.															26.2	33.0	23.3	24.9	23.3	
Annual Average (State)															11.2		10.0	11.4	9.7	
Avg. of Qtrly. Means (Nat)															11.2	12.2	11.9	11.4	10.6	

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	1.9	1.7	1.6	1.5	1.5	1.6	1.7	1.7	1.6	1.4	1.1	0.9
Max. 1-Hr. Concentration	5.0	5.0	4.0	6.0	5.0	5.0	5.0	6.0	3.9	3.3	3.2	2.7	3.1	2.9	2.7	2.2	1.9	3.3	2.1	2.1
Max. 8-Hr. Concentration	3.6	2.9	2.1	2.9	2.3	2.5	2.4	2.0	2.0	1.5	1.6	1.3	1.7	1.8	1.6	1.6	1.1	1.3	0.8	0.8
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.085	0.083	0.084	0.089	0.092	0.091	0.088	0.088	0.088	0.088	0.084	0.082	0.077	0.075	0.073	0.071	0.069	0.070	0.069	0.068
Max. 1-Hr. Concentration	0.080	0.080	0.110	0.090	0.090	0.090	0.090	0.090	0.080	0.082	0.080	0.069	0.070	0.068	0.064	0.081	0.068	0.067	0.066	0.059
Max. Annual Average		0.019	0.022	0.024	0.021	0.021		0.019	0.021	0.021	0.020		0.016	0.018	0.016	0.017	0.016	0.016	0.013	0.012

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-75

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin

County: San Diego

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.148	0.144	0.138	0.142	0.146	0.141	0.135	0.128	0.124	0.126	0.122	0.117	0.119	0.117	0.116	0.104	0.106	0.104	0.101	0.097
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089	0.086
Peak 1-Hour Indicator (State)	0.179	0.179	0.179	0.187	0.181	0.171	0.162	0.152	0.151	0.148	0.142	0.132	0.133	0.133	0.131	0.118	0.117	0.116	0.111	0.110
4th High 1-Hr. in 3 Yrs2	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.137	0.133	0.131	0.130	0.118	0.118	0.118	0.115	0.112
Max. 8-Hr. Concentration	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095	0.089
Maximum 1-Hr. Concentration	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129	0.113
Days Above State 8-Hr. Std.	159	160	189	189	167	144	133	127	122	127	89	73	88	74	75	64	56	59	43	51
Days Above Nat. 8-Hr. Std.	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8	5
Days Above State 1-Hr. Std.	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12	16

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			80	90	115	81	67	159	129	121	93	125	89	119	136	106	131	289	138	154
Max. 24-Hr. Concentration (Nat)			80	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137	155
Max. Annual Average (State)				44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	42.5	50.9	44.5	47.4	52.4	52.6	51.7	28.6
Max. Annual Average (Nat)			40.0	43.8	37.6	40.6	35.9	45.9	50.7	46.8	38.5	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2	49.8
Calc Days Above State 24-Hr Std				114	38	84	12	134	134	122	12	125	107	124	109	129	173	151	175	13
Calc Days Above Nat 24-Hr Std				0	0	0	0	6	0	0	0	0	0	0	0	0	0	6	0	6

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														64.3	66.3	60.0	53.6	239.2	67.3	44.1
Max. 24-Hr. Concentration (Nat)														64.3	66.3	60.0	53.6	239.2	67.3	44.1
98th Percentile of 24-Hr Conc.														35.7	32.5	40.8	36.0	46.9	37.4	30.2
Annual Average (State)																	15.5	14.4	14.1	
Avg. of Qtrly. Means (Nat)														18.0	15.8	17.7	16.0	15.5	14.1	11.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6	4.4
Max. 1-Hr. Concentration	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9	7.9
Max. 8-Hr. Concentration	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1	4.7
Days Above State 8-Hr. Std.	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Days Above Nat. 8-Hr. Std.	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.193	0.203	0.215	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119	0.121
Max. 1-Hr. Concentration	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125	0.109
Max. Annual Average	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.06	0.06	0.07	0.07	0.07	0.06	0.08	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.04
Max. Annual Average	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Max. 24-Hr. Concentration	0.03	0.04	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.01

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San Francisco Bay Area Air Basin

County: Alameda

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.115	0.110	0.109	0.110	0.106	0.102	0.100	0.098	0.095	0.107	0.116	0.114	0.114	0.111	0.114	0.095	0.099	0.101	0.098	0.094
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.093	0.089	0.087	0.089	0.087	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.066	0.081	0.084	0.083	0.078
Peak 1-Hour Indicator (State)	0.146	0.139	0.142	0.138	0.136	0.130	0.130	0.126	0.121	0.135	0.151	0.149	0.151	0.143	0.143	0.121	0.125	0.129	0.127	0.122
4th High 1-Hr. in 3 Yrs2	0.150	0.140	0.140	0.140	0.130	0.130	0.120	0.120	0.120	0.138	0.138	0.138	0.138	0.139	0.139	0.113	0.124	0.123	0.123	0.113
Max. 8-Hr. Concentration	0.106	0.116	0.096	0.101	0.105	0.092	0.091	0.102	0.092	0.115	0.112	0.084	0.110	0.116	0.114	0.089	0.106	0.094	0.080	0.090
Maximum 1-Hr. Concentration	0.140	0.160	0.150	0.140	0.130	0.140	0.130	0.130	0.129	0.155	0.138	0.114	0.146	0.146	0.152	0.113	0.160	0.128	0.113	0.120
Days Above State 8-Hr. Std.	23	23	27	20	9	15	16	11	8	22	24	7	22	22	7	14	14	13	7	7
Days Above Nat. 8-Hr. Std.	5	11	8	5	4	2	3	4	3	12	10	0	10	5	2	3	6	4	0	1
Days Above State 1-Hr. Std.	22	21	27	14	9	19	16	8	7	21	23	6	22	15	9	9	11	11	6	6

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			69	108	137	155	99	84	97	52	71	63	66	90	74	114	66	37	49	54
Max. 24-Hr. Concentration (Nat)			69	108	137	155	99	84	97	52	71	65	63	88	71	109	64	37	47	52
Max. Annual Average (State)				37.2	32.5	36.5	29.0	25.5	24.9	22.3	22.6	24.3	22.5	25.9	22.2	25.1	25.0	18.9	20.0	18.8
Max. Annual Average (Nat)			29.6	37.1	32.6	36.1	29.0	25.9	24.9	22.8	22.6	24.3	21.8	24.2	21.5	24.6	24.5	18.6	19.7	18.5
Calc Days Above State 24-Hr Std				76	59	85	30	18	18	6	6	12	12	18	12	24	12	0	0	6
Calc Days Above Nat 24-Hr Std				0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														63.1	56.4	107.5	84.5	42.0	40.8	33.4
Max. 24-Hr. Concentration (Nat)														63.1	56.4	107.5	61.6	42.0	40.8	33.4
98th Percentile of 24-Hr Conc.															38.3	57.1	50.5	24.2	35.3	28.7
Annual Average (State)															10.5	12.4	13.8	9.0	10.2	9.0
Avg. of Qtrly. Means (Nat)															11.2	12.4	13.8	9.0	10.3	9.1

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	7.0	6.4	6.6	6.6	6.8	7.0	6.4	5.8	4.8	4.8	4.9	4.4	4.5	4.7	4.6	4.4	5.5	5.5	3.0	2.7
Max. 1-Hr. Concentration	12.0	10.0	10.0	10.0	8.0	9.0	7.0	7.0	8.7	5.5	6.9	7.9	6.3	6.4	5.4	5.8	7.7	6.0	3.5	3.4
Max. 8-Hr. Concentration	7.5	5.0	5.6	7.5	6.1	6.8	4.6	4.9	5.6	3.8	3.9	3.6	4.6	5.2	3.4	4.0	5.1	4.4	2.6	2.4
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.140	0.138	0.139	0.138	0.138	0.133	0.120	0.112	0.092	0.091	0.090	0.089	0.087	0.094	0.090	0.090	0.077	0.075	0.067	0.065
Max. 1-Hr. Concentration	0.140	0.150	0.140	0.150	0.130	0.150	0.110	0.110	0.097	0.086	0.088	0.086	0.098	0.112	0.081	0.078	0.080	0.076	0.063	0.072
Max. Annual Average	0.025	0.025	0.026	0.025	0.023	0.024	0.022	0.022	0.022	0.021	0.022	0.020	0.020	0.022	0.020	0.019	0.019	0.017	0.015	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																	0.02	0.02		
Max. Annual Average																0.00	0.00	0.00		
Max. 24-Hr. Concentration																0.00	0.01	0.01		

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San Francisco Bay Area Air Basin

County: Contra Costa

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.106	0.106	0.103	0.106	0.098	0.096	0.094	0.093	0.094	0.098	0.103	0.101	0.103	0.104	0.103	0.097	0.094	0.095	0.094	0.089
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.088	0.088	0.086	0.088	0.086	0.083	0.081	0.079	0.079	0.081	0.085	0.083	0.083	0.084	0.084	0.082	0.078	0.081	0.079	0.072
Peak 1-Hour Indicator (State)	0.129	0.129	0.129	0.129	0.115	0.113	0.112	0.112	0.113	0.124	0.126	0.123	0.127	0.128	0.127	0.120	0.112	0.114	0.109	0.103
4th High 1-Hr. in 3 Yrs2	0.130	0.130	0.130	0.130	0.110	0.110	0.110	0.110	0.121	0.130	0.127	0.127	0.119	0.126	0.130	0.126	0.114	0.106	0.100	0.098
Max. 8-Hr. Concentration	0.092	0.105	0.095	0.097	0.105	0.088	0.092	0.096	0.097	0.114	0.100	0.081	0.109	0.122	0.094	0.102	0.096	0.085	0.083	0.080
Maximum 1-Hr. Concentration	0.120	0.150	0.140	0.110	0.120	0.110	0.110	0.130	0.121	0.152	0.137	0.108	0.147	0.156	0.138	0.134	0.111	0.101	0.105	0.098
Days Above State 8-Hr. Std.	18	39	20	19	11	13	10	16	10	19	22	5	20	17	11	14	13	12	8	2
Days Above Nat. 8-Hr. Std.	4	15	5	7	5	2	2	2	2	6	5	0	8	7	1	2	5	1	0	0
Days Above State 1-Hr. Std.	9	22	12	12	7	5	7	10	6	12	15	4	16	8	2	7	10	5	3	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				115	147	123	73	81	87	73	76	78	71	104	65	112	77	59	64	64
Max. 24-Hr. Concentration (Nat)				115	147	123	73	81	87	73	76	78	67	101	62	106	73	58	62	62
Max. Annual Average (State)				30.3	29.3	33.4	26.1	25.3	24.7	23.3	21.1	22.3	20.6	26.0	20.4	23.6	24.5	19.4	21.7	20.1
Max. Annual Average (Nat)				30.3	29.3	33.2	26.5	25.1	24.5	23.3	21.1	22.3	20.1	25.3	19.8	22.7	23.8	20.2	21.1	19.5
Calc Days Above State 24-Hr Std				53	41	79	47	37	24	18	6	12	17	37	12	25	18	6	6	6
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														56.6	52.6	103.6	76.7	49.7	73.7	48.9
Max. 24-Hr. Concentration (Nat)														56.6	52.6	103.6	76.7	49.7	73.7	48.9
98th Percentile of 24-Hr Conc.															42.7	68.3	62.3	33.8	42.2	
Annual Average (State)															10.9	12.9	13.7	9.7	11.5	
Avg. of Qtrly. Means (Nat)															11.1	11.0	13.0	9.7		

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	6.2	5.8	6.3	6.1	6.1	6.1	5.7	5.2	4.5	4.1	3.6	3.2	3.3	3.4	3.3	3.1	2.8	2.6	2.4	2.0
Max. 1-Hr. Concentration	10.0	12.0	15.0	12.0	11.0	9.0	9.0	9.0	7.7	6.5	6.8	5.7	5.7	7.8	4.9	5.2	6.2	3.4	4.1	3.3
Max. 8-Hr. Concentration	5.9	5.5	6.6	5.6	5.8	5.4	5.4	5.0	4.2	2.9	2.9	3.2	3.8	3.3	2.7	2.7	2.5	2.0	2.0	1.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.114	0.113	0.112	0.110	0.098	0.099	0.096	0.097	0.084	0.082	0.079	0.077	0.070	0.075	0.073	0.074	0.062	0.062	0.059	0.059
Max. 1-Hr. Concentration	0.130	0.130	0.130	0.110	0.100	0.120	0.110	0.100	0.081	0.087	0.085	0.076	0.066	0.087	0.074	0.065	0.069	0.070	0.065	0.058
Max. Annual Average	0.023	0.023	0.023	0.023	0.021	0.023	0.020	0.020	0.020	0.019	0.017	0.016	0.016	0.018	0.016	0.015	0.015	0.013	0.013	0.012

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.05	0.04	0.05	0.03
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.02	0.01	0.01	0.01

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San Francisco Bay Area Air Basin

County: Marin

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.074	0.070	0.070	0.070	0.066	0.064	0.060	0.057	0.060	0.066	0.067	0.064	0.060	0.061	0.061	0.061	0.055	0.057	0.056	0.057
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.063	0.059	0.058	0.057	0.053	0.054	0.051	0.047	0.050	0.055	0.057	0.055	0.051	0.051	0.050	0.051	0.047	0.048	0.049	0.051
Peak 1-Hour Indicator (State)	0.100	0.094	0.094	0.095	0.085	0.075	0.066	0.075	0.081	0.089	0.088	0.087	0.081	0.085	0.083	0.081	0.070	0.072	0.076	0.076
4th High 1-Hr. in 3 Yrs2	0.100	0.090	0.090	0.090	0.080	0.080	0.066	0.080	0.080	0.082	0.088	0.088	0.081	0.092	0.085	0.087	0.075	0.077	0.077	0.081
Max. 8-Hr. Concentration	0.060	0.076	0.076	0.068	0.062	0.067	0.055	0.061	0.061	0.072	0.081	0.073	0.058	0.080	0.058	0.065	0.056	0.067	0.063	0.059
Maximum 1-Hr. Concentration	0.080	0.100	0.100	0.080	0.080	0.080	0.070	0.080	0.089	0.088	0.105	0.106	0.074	0.102	0.071	0.087	0.077	0.087	0.091	0.081
Days Above State 8-Hr. Std.	0	1	1	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	1	1	0	0	0	0	0	0	0	2	1	0	2	0	0	0	0	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			91	73	115	115	63	69	72	74	50	72	55	78	42	83	73	41	52	39
Max. 24-Hr. Concentration (Nat)			91	73	115	115	63	69	72	74	50	72	52	76	40	79	70	39	51	37
Max. Annual Average (State)				29.7	25.8	30.6	24.4	23.4	24.2	20.9	21.7	21.9	20.9	22.8		21.1	22.2	17.6	17.9	16.5
Max. Annual Average (Nat)			23.3	29.5	25.7	30.2	24.4	23.4	24.2	20.8	21.7	21.9	20.1	22.0	19.5	20.4	21.4	17.0	17.4	16.0
Calc Days Above State 24-Hr Std				41	23	63	29	6	24	6	0	12	6	12		18	18	0	6	0
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)															41.7	53.1	69.9	31.9	52.2	43.0
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.5	5.4	5.4	4.7	4.9	5.3	5.4	5.1	3.9	3.5	3.3	3.2	3.3	3.1	2.9	2.6	2.3	2.2	2.0	1.7
Max. 1-Hr. Concentration	10.0	12.0	10.0	9.0	8.0	10.0	8.0	9.0	6.4	6.1	7.1	6.0	5.9	5.6	4.2	5.2	4.1	3.8	3.2	3.0
Max. 8-Hr. Concentration	5.9	4.5	5.0	4.0	5.0	5.7	5.0	4.0	3.0	3.2	4.0	2.6	3.3	2.9	2.3	2.4	1.9	2.0	2.0	1.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.100	0.099	0.104	0.102	0.096	0.091	0.084	0.085	0.077	0.075	0.068	0.065	0.064	0.068	0.065	0.066	0.059	0.060	0.058	0.056
Max. 1-Hr. Concentration	0.110	0.130	0.140	0.100	0.070	0.090	0.080	0.080	0.079	0.060	0.068	0.067	0.062	0.087	0.057	0.061	0.057	0.066	0.057	0.054
Max. Annual Average	0.024	0.023	0.022	0.022	0.021	0.021	0.021	0.021	0.020	0.018	0.018	0.016	0.017	0.018	0.016	0.017	0.017	0.016	0.015	0.013

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Francisco Bay Area Air Basin

County: Napa

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.086	0.084	0.085	0.088	0.080	0.076	0.072	0.078	0.079	0.088	0.086	0.083	0.078	0.083	0.083	0.077	0.073	0.077	0.078	0.073
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.069	0.068	0.070	0.071	0.066	0.064	0.063	0.066	0.066	0.073	0.071	0.067	0.063	0.067	0.069	0.066	0.063	0.065	0.066	0.061
Peak 1-Hour Indicator (State)	0.108	0.106	0.107	0.108	0.099	0.098	0.093	0.098	0.098	0.107	0.107	0.104	0.101	0.106	0.105	0.099	0.090	0.095	0.095	0.090
4th High 1-Hr. in 3 Yrs2	0.110	0.110	0.100	0.100	0.090	0.100	0.090	0.100	0.091	0.105	0.095	0.095	0.091	0.103	0.103	0.099	0.082	0.099	0.092	0.092
Max. 8-Hr. Concentration	0.067	0.080	0.088	0.085	0.072	0.075	0.070	0.083	0.075	0.096	0.075	0.071	0.099	0.090	0.063	0.078	0.082	0.083	0.072	0.067
Maximum 1-Hr. Concentration	0.090	0.110	0.100	0.100	0.090	0.110	0.090	0.120	0.092	0.130	0.090	0.084	0.125	0.115	0.077	0.099	0.116	0.105	0.092	0.091
Days Above State 8-Hr. Std.	0	7	6	3	1	3	0	4	3	8	3	1	3	6	0	1	2	3	3	0
Days Above Nat. 8-Hr. Std.	0	0	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	6	1	2	0	3	0	2	0	4	0	0	3	4	0	1	1	2	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				97	117	100	74	70	86	69						96	70	31		14
Max. 24-Hr. Concentration (Nat)				97	117	100	74	70	86	69	57	78	60	66	45	91	67	29		13
Max. Annual Average (State)				31.7	33.7	33.0	27.1	25.8		20.2						24.8	26.4			
Max. Annual Average (Nat)				31.7	33.5	33.1	27.1	25.7	23.6	20.3	20.2	18.7	16.9	18.6	16.3	24.0	25.4	17.7		2.4
Calc Days Above State 24-Hr Std				53	47	67	30	18		6						18	24			
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0			

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	6.9	6.4	6.4	6.4	6.3	6.2	6.0	5.7	5.2	5.0	4.5	4.1	4.1	4.0	3.7	3.5	2.8	2.6	2.3	2.3
Max. 1-Hr. Concentration	11.0	12.0	11.0	12.0	10.0	9.0	8.0	7.0	7.4	7.6	5.6	5.7	5.8	5.5	4.7	5.7	4.2	4.7	3.7	3.2
Max. 8-Hr. Concentration	6.8	5.6	6.0	5.4	7.1	5.8	5.3	4.4	4.6	3.5	3.8	3.9	3.9	4.2	2.8	3.0	2.4	2.5	2.0	2.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.091	0.093	0.095	0.090	0.084	0.087	0.081	0.082	0.072	0.071	0.065	0.063	0.058	0.066	0.061	0.064	0.055	0.058	0.056	0.055
Max. 1-Hr. Concentration	0.090	0.090	0.080	0.090	0.070	0.090	0.060	0.080	0.065	0.059	0.077	0.075	0.061	0.086	0.054	0.059	0.052	0.066	0.056	0.060
Max. Annual Average	0.018	0.018	0.018	0.017	0.017	0.017	0.015	0.015	0.015	0.014	0.014	0.012	0.012	0.014	0.012	0.013	0.013	0.012	0.011	0.010

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Francisco Bay Area Air Basin

County: San Francisco

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.060	0.059	0.059	0.059	0.057	0.054	0.052	0.049	0.050	0.052	0.052	0.052	0.049	0.050	0.049	0.051	0.050	0.053	0.054	0.054
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.048	0.037	0.052	0.051	0.049	0.045	0.043	0.042	0.042	0.044	0.046	0.045	0.043	0.044	0.044	0.046	0.044	0.047	0.047	0.048
Peak 1-Hour Indicator (State)	0.078	0.073	0.075	0.076	0.070	0.063	0.058	0.060	0.063	0.066	0.064	0.067	0.059	0.059	0.057	0.060	0.057	0.062	0.067	0.067
4th High 1-Hr. in 3 Yrs2	0.090	0.070	0.080	0.080	0.070	0.060	0.060	0.060	0.060	0.080	0.071	0.071	0.061	0.067	0.061	0.063	0.059	0.061	0.096	0.096
Max. 8-Hr. Concentration	0.056	0.070	0.070	0.063	0.051	0.047	0.052	0.052	0.045	0.067	0.050	0.059	0.046	0.057	0.043	0.054	0.049	0.059	0.059	0.055
Maximum 1-Hr. Concentration	0.070	0.090	0.090	0.080	0.060	0.050	0.080	0.080	0.055	0.088	0.071	0.068	0.053	0.079	0.058	0.082	0.054	0.085	0.096	0.058
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			117	101	165	109	81	69	93	50	71	81	56	82	67	70	79	52	54	46
Max. 24-Hr. Concentration (Nat)			117	101	165	109	81	69	93	50	71	81	52	78	63	67	74	51	52	45
Max. Annual Average (State)				35.8	33.6	34.9		28.8	28.2	24.8	24.3	24.9	22.9	27.5	25.1	27.8	26.0	22.7	22.5	20.1
Max. Annual Average (Nat)			25.3	35.9	33.8	35.2	31.7	28.8	28.0	24.8	24.3	24.9	21.7	26.4	24.0	25.9	24.7	21.8	21.6	19.2
Calc Days Above State 24-Hr Std				75	70	91		30	36	0	12	18	6	37	12	48	24	6	6	0
Calc Days Above Nat 24-Hr Std				0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														71.2	47.9	76.6	70.2	41.6	45.8	43.6
Max. 24-Hr. Concentration (Nat)														71.2	47.9	76.6	70.2	41.6	45.8	43.6
98th Percentile of 24-Hr Conc.																51.3	57.5	33.0	32.2	32.6
Annual Average (State)																	13.1	10.2	9.9	9.5
Avg. of Qtrly. Means (Nat)																11.5	13.1	10.2	10.0	9.5

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	9.1	8.6	8.3	7.7	7.8	7.2	6.7	6.4	5.8	5.6	4.7	4.5	4.2	4.2	3.8	3.7	2.9	2.8	2.6	2.6
Max. 1-Hr. Concentration	20.0	17.0	15.0	14.0	12.0	14.0	10.0	10.0	7.5	8.5	8.6	8.0	7.1	8.6	5.5	5.2	6.8	8.6	3.7	4.1
Max. 8-Hr. Concentration	12.6	10.0	12.8	9.0	6.9	8.4	7.4	6.9	5.3	5.3	5.6	5.7	4.0	4.6	3.2	3.3	2.6	3.6	2.7	3.1
Days Above State 8-Hr. Std.	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.143	0.112	0.116	0.122	0.120	0.112	0.108	0.099	0.092	0.089	0.088	0.083	0.076	0.083	0.084	0.083	0.074	0.074	0.071	0.067
Max. 1-Hr. Concentration	0.110	0.150	0.120	0.140	0.110	0.100	0.090	0.080	0.091	0.088	0.081	0.067	0.080	0.103	0.074	0.073	0.075	0.072	0.063	0.066
Max. Annual Average	0.024	0.024	0.026			0.024	0.022	0.024	0.022	0.021	0.021	0.020	0.020	0.021	0.020	0.019	0.019	0.018	0.017	0.016

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.08		0.03	0.04	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

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San Francisco Bay Area Air Basin

County: San Mateo

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.072	0.069	0.071	0.073	0.069	0.063	0.056	0.057	0.056	0.066	0.069	0.069	0.060	0.056	0.054	0.057	0.060	0.067	0.068	0.066
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.061	0.060	0.060	0.065	0.058	0.053	0.049	0.050	0.049	0.058	0.061	0.062	0.053	0.049	0.047	0.049	0.052	0.058	0.060	0.057
Peak 1-Hour Indicator (State)	0.104	0.099	0.097	0.099	0.089	0.078	0.071	0.075	0.078	0.093	0.098	0.099	0.078	0.072	0.071	0.074	0.079	0.085	0.087	0.079
4th High 1-Hr. in 3 Yrs2	0.110	0.110	0.100	0.100	0.090	0.080	0.070	0.080	0.084	0.103	0.103	0.103	0.090	0.079	0.080	0.081	0.081	0.090	0.090	0.090
Max. 8-Hr. Concentration	0.071	0.074	0.076	0.072	0.050	0.056	0.065	0.076	0.066	0.099	0.067	0.073	0.053	0.063	0.063	0.067	0.063	0.078	0.071	0.061
Maximum 1-Hr. Concentration	0.100	0.120	0.100	0.100	0.080	0.080	0.090	0.100	0.084	0.140	0.097	0.090	0.066	0.082	0.083	0.105	0.090	0.113	0.097	0.084
Days Above State 8-Hr. Std.	1	2	2	1	0	0	0	1	0	5	0	1	0	0	0	0	0	3	1	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	1	2	2	1	0	0	0	1	0	5	1	0	0	0	0	1	0	1	1	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				90	137	90	80	76	76	48	48	70	56	95	61	68	56	38	65	81
Max. 24-Hr. Concentration (Nat)				90	137	90	80	76	76	48	48	70	49	85	53	65	53	37	62	78
Max. Annual Average (State)				33.1	27.9	32.1	28.5	26.5	24.8	21.0	21.0	23.9	24.5	28.3	24.0	24.8	24.6	19.8	20.5	20.9
Max. Annual Average (Nat)				33.0	28.3	32.1	28.5	26.5	24.9	21.0	21.1	23.9	22.4	24.6	21.2	22.5	22.1	19.3	19.7	19.5
Calc Days Above State 24-Hr Std				59	47	73	41	31	36	0	0	12	12	31	18	18	6	0	6	10
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														59.7	47.0	70.9	43.0	31.9	35.8	30.9
Max. 24-Hr. Concentration (Nat)														59.7	47.0	70.9	43.0	31.9	35.8	30.9
98th Percentile of 24-Hr Conc.															36.9	70.9	36.3	26.1	27.9	29.4
Annual Average (State)																	11.5	8.9	9.3	8.8
Avg. of Qtrly. Means (Nat)															10.9	11.3	11.5	8.9	9.3	8.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	7.0	6.9	6.1	5.8	5.9	5.9	5.8	5.8	5.4	4.9	4.4	3.9	4.2	4.3	4.4	4.2	3.7	3.3	2.9	2.6
Max. 1-Hr. Concentration	12.0	13.0	13.0	13.0	12.0	11.0	12.0	10.0	12.0	10.1	8.6	10.7	8.7	8.0	9.8	7.1	5.8	5.4	4.8	4.5
Max. 8-Hr. Concentration	6.4	5.5	5.4	5.3	5.9	6.5	4.8	5.8	5.4	3.9	3.6	4.2	4.1	3.8	4.4	3.9	2.8	2.6	2.1	2.3
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.130	0.137	0.140	0.132	0.128	0.122	0.116	0.110	0.101	0.096	0.092	0.081	0.077	0.079	0.076	0.077	0.066	0.068	0.064	0.064
Max. 1-Hr. Concentration	0.130	0.120	0.130	0.120	0.120	0.120	0.100	0.090	0.106	0.077	0.090	0.084	0.063	0.104	0.065	0.074	0.066	0.081	0.061	0.062
Max. Annual Average	0.024		0.024	0.024	0.022	0.023	0.021	0.022	0.021	0.019	0.020	0.018	0.018	0.019	0.018	0.017	0.017	0.015	0.015	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Francisco Bay Area Air Basin

County: Santa Clara

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.127	0.120	0.116	0.116	0.108	0.098	0.093	0.096	0.095	0.105	0.103	0.102	0.102	0.101	0.105	0.093	0.100	0.101	0.100	0.089
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.097	0.092	0.092	0.097	0.088	0.082	0.078	0.080	0.080	0.083	0.088	0.085	0.085	0.080	0.081	0.076	0.082	0.086	0.084	0.075
Peak 1-Hour Indicator (State)	0.155	0.150	0.147	0.149	0.130	0.117	0.116	0.119	0.116	0.126	0.126	0.126	0.127	0.126	0.130	0.121	0.122	0.118	0.116	0.107
4th High 1-Hr. in 3 Yrs2	0.150	0.150	0.140	0.140	0.120	0.120	0.130	0.120	0.118	0.130	0.129	0.129	0.118	0.125	0.125	0.117	0.119	0.116	0.112	0.105
Max. 8-Hr. Concentration	0.105	0.108	0.101	0.102	0.096	0.108	0.101	0.112	0.095	0.109	0.103	0.084	0.111	0.102	0.101	0.096	0.099	0.101	0.084	0.087
Maximum 1-Hr. Concentration	0.140	0.170	0.140	0.130	0.130	0.130	0.130	0.130	0.130	0.145	0.129	0.114	0.147	0.125	0.113	0.123	0.121	0.124	0.102	0.113
Days Above State 8-Hr. Std.	27	45	37	24	13	14	24	18	12	23	30	7	19	15	9	12	15	13	9	5
Days Above Nat. 8-Hr. Std.	10	25	19	7	4	5	3	4	2	14	8	0	8	4	1	3	6	6	0	1
Days Above State 1-Hr. Std.	32	41	34	17	10	12	15	14	8	22	24	3	22	12	4	9	10	11	1	4

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			146	147	127	120	112	93	93	60	76	78	100	117	80	82	73	60	65	71
Max. 24-Hr. Concentration (Nat)			146	150	165	153	112	101	93	71	77	95	92	114	76	77	70	57	63	69
Max. Annual Average (State)				37.7	35.1	37.9	33.9	28.1	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7		24.8	26.0	24.2
Max. Annual Average (Nat)			33.3	40.8	35.1	38.3	33.7	28.4	28.6	28.4	22.7	25.8	25.1	28.7	26.8	28.9	30.6	24.2	25.3	23.5
Calc Days Above State 24-Hr Std				76	65	85	53	31	36	24	12	18	18	31	42	30		18	25	23
Calc Days Above Nat 24-Hr Std				0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														77.0	67.2	85.6	57.6	56.1	51.5	54.6
Max. 24-Hr. Concentration (Nat)														77.0	67.2	85.6	57.6	56.1	51.5	54.6
98th Percentile of 24-Hr Conc.															55.3	85.6	37.3	37.4	39.8	39.8
Annual Average (State)																12.4	12.0	11.7	11.6	11.8
Avg. of Qtrly. Means (Nat)														16.8	13.6	12.8	12.0	11.7	11.6	11.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	14.0	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	3.9	3.8	3.7
Max. 1-Hr. Concentration	16.0	13.0	15.0	19.0	18.0	15.0	11.0	14.0	12.0	8.9	8.8	9.9	8.6	9.0	8.9	7.6	5.9	5.5	4.4	4.3
Max. 8-Hr. Concentration	11.3	7.4	10.4	12.0	11.0	11.0	7.8	6.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	4.5	4.0	3.0	3.1
Days Above State 8-Hr. Std.	5	0	3	8	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	5	0	3	7	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100		0.079	0.080
Max. 1-Hr. Concentration	0.160	0.170	0.160	0.150	0.150	0.140	0.100	0.120	0.107	0.116	0.108	0.118	0.083	0.128	0.114	0.108	0.069		0.073	0.074
Max. Annual Average	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024				0.019

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Francisco Bay Area Air Basin

County: Solano

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.094	0.099	0.100	0.101	0.090	0.087	0.085	0.086	0.085	0.092	0.097	0.096	0.097	0.102	0.103	0.096	0.091	0.090	0.089	0.084
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.073	0.077	0.077	0.078	0.074	0.074	0.074	0.074	0.073	0.077	0.079	0.078	0.077	0.081	0.080	0.075	0.062	0.065	0.071	0.068
Peak 1-Hour Indicator (State)	0.113	0.114	0.112	0.118	0.107	0.103	0.100	0.102	0.103	0.111	0.115	0.114	0.116	0.122	0.124	0.117	0.110	0.105	0.105	0.098
4th High 1-Hr. in 3 Yrs2	0.120	0.110	0.110	0.110	0.110	0.100	0.100	0.100	0.100	0.109	0.113	0.113	0.110	0.117	0.117	0.111	0.103	0.101	0.101	0.091
Max. 8-Hr. Concentration	0.076	0.092	0.093	0.086	0.087	0.087	0.086	0.096	0.082	0.099	0.095	0.083	0.097	0.101	0.076	0.084	0.083	0.077	0.077	0.073
Maximum 1-Hr. Concentration	0.090	0.120	0.130	0.120	0.110	0.110	0.100	0.130	0.107	0.133	0.113	0.103	0.121	0.129	0.096	0.102	0.109	0.101	0.104	0.090
Days Above State 8-Hr. Std.	2	18	9	7	4	5	4	7	5	13	11	2	12	11	2	3	8	6	3	2
Days Above Nat. 8-Hr. Std.	0	5	2	1	1	1	2	2	0	5	3	0	3	4	0	0	0	0	0	0
Days Above State 1-Hr. Std.	0	14	6	4	2	5	4	4	3	13	8	1	9	9	1	3	4	2	1	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																	84	39	51	52
Max. 24-Hr. Concentration (Nat)									63	59	49	85	71	84	53	86	80	38	51	49
Max. Annual Average (State)																	22.2	17.3	19.6	
Max. Annual Average (Nat)									16.1	18.7	17.2	18.3	17.2	19.3	15.0	19.5	21.4	16.8	18.9	16.8
Calc Days Above State 24-Hr Std																	12	0	6	
Calc Days Above Nat 24-Hr Std										0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														90.5	60.1	90.1	72.3	30.8	39.7	43.8
Max. 24-Hr. Concentration (Nat)														90.5	60.1	90.1	72.3	30.8	39.7	43.8
98th Percentile of 24-Hr Conc.															44.0	56.0	55.4	25.1	36.9	35.6
Annual Average (State)															11.6	12.5	14.0	9.4	11.1	
Avg. of Qtrly. Means (Nat)															11.6	12.5	14.0	9.4	11.1	9.7

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	10.9	10.3	10.3	10.1	10.4	10.3	9.3	8.4	7.5	7.1	6.2	5.6	5.4	5.7	5.5	5.3	4.6	4.1	4.0	3.7
Max. 1-Hr. Concentration	13.0	13.0	14.0	13.0	12.0	13.0	11.0	12.0	8.7	7.0	6.4	6.5	7.2	6.6	6.5	5.6	5.8	4.0	4.0	3.9
Max. 8-Hr. Concentration	10.8	9.4	10.6	11.5	9.0	9.6	6.6	7.9	6.5	5.3	4.9	4.9	5.3	5.5	5.1	4.1	3.9	2.9	3.4	3.1
Days Above State 8-Hr. Std.	4	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.097	0.090	0.090	0.094	0.094	0.096	0.090	0.087	0.075	0.072	0.069	0.065	0.064	0.068	0.067	0.066	0.056	0.055	0.054	0.056
Max. 1-Hr. Concentration	0.100	0.080	0.090	0.130	0.080	0.090	0.070	0.070	0.066	0.070	0.071	0.068	0.064	0.083	0.064	0.057	0.051	0.067	0.049	0.070
Max. Annual Average		0.018	0.019	0.018	0.018	0.018	0.017	0.016	0.016	0.015	0.015	0.013	0.014	0.014	0.013	0.013	0.013	0.012	0.012	0.011

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00

Table A-84

A portion of Solano County lies within the Sacramento Valley Air Basin.

San Francisco Bay Area Air Basin

County: Sonoma

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.090	0.091	0.090	0.096	0.089	0.087	0.079	0.076	0.072	0.066	0.073	0.066	0.061	0.064	0.064	0.064	0.058	0.060	0.058	0.056
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.068	0.069	0.071	0.076	0.072	0.072	0.067	0.063	0.058	0.057	0.058	0.054	0.052	0.054	0.055	0.055	0.052	0.054	0.051	0.049
Peak 1-Hour Indicator (State)	0.105	0.102	0.101	0.104	0.102	0.103	0.095	0.091	0.083	0.089	0.086	0.085	0.079	0.086	0.083	0.084	0.070	0.074	0.071	0.070
4th High 1-Hr. in 3 Yrs2	0.100	0.100	0.100	0.100	0.100	0.100	0.090	0.090	0.080	0.084	0.084	0.085	0.077	0.090	0.086	0.086	0.077	0.086	0.076	0.072
Max. 8-Hr. Concentration	0.078	0.097	0.096	0.083	0.073	0.078	0.080	0.062	0.072	0.077	0.077	0.080	0.054	0.076	0.056	0.063	0.060	0.079	0.060	0.051
Maximum 1-Hr. Concentration	0.100	0.110	0.110	0.100	0.090	0.100	0.090	0.080	0.086	0.097	0.089	0.093	0.068	0.095	0.078	0.086	0.077	0.096	0.076	0.072
Days Above State 8-Hr. Std.	2	9	7	9	1	4	1	0	1	2	1	1	0	2	0	0	0	1	0	0
Days Above Nat. 8-Hr. Std.	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above State 1-Hr. Std.	1	2	2	3	0	3	0	0	0	1	0	0	0	1	0	0	0	1	0	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)											38	85	56	57	48	78	64	36	48	39
Max. 24-Hr. Concentration (Nat)									61	46	38	85	53	54	46	74	60	34	47	37
Max. Annual Average (State)												18.7			18.2	21.9	20.4	16.9	18.0	15.9
Max. Annual Average (Nat)									19.6	15.4	16.9	18.6	18.2	20.4	17.6	21.0	19.7	16.4	17.3	15.4
Calc Days Above State 24-Hr Std												12			0	18	12	0	0	0
Calc Days Above Nat 24-Hr Std										0	0	0	0		0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														54.9	40.1	75.9	50.7	38.8	26.6	33.6
Max. 24-Hr. Concentration (Nat)														54.9	40.1	75.9	50.7	38.8	26.6	33.6
98th Percentile of 24-Hr Conc.															36.8	41.4	42.4	29.8	25.2	29.7
Annual Average (State)															10.5	10.8		8.7	8.3	7.6
Avg. of Qtrly. Means (Nat)															10.5	10.8	10.5	8.7	8.3	7.6

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.6	5.5	5.2	5.5	5.6	5.2	4.4	4.3	3.8	3.6	3.1	3.0	3.1	3.3	3.2	3.1	2.7	2.4	2.1	1.9
Max. 1-Hr. Concentration	9.0	7.0	9.0	9.0	7.0	6.0	6.0	6.0	5.1	4.9	5.6	5.4	5.2	5.7	4.5	4.8	3.7	3.1	2.7	2.5
Max. 8-Hr. Concentration	5.3	4.3	5.1	6.1	5.1	4.0	4.0	3.8	3.4	2.8	3.0	3.3	3.2	3.4	3.1	2.4	2.1	1.8	1.6	2.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.119	0.110	0.103	0.097	0.094	0.083	0.083	0.082	0.080	0.076	0.067	0.064	0.057	0.062	0.060	0.061	0.055	0.056	0.054	0.051
Max. 1-Hr. Concentration	0.110	0.090	0.120	0.090	0.090	0.090	0.100	0.090	0.084	0.066	0.062	0.061	0.057	0.074	0.054	0.057	0.054	0.055	0.048	0.047
Max. Annual Average	0.016	0.016	0.016		0.014	0.015	0.015		0.015	0.015	0.014	0.013	0.015	0.014	0.013	0.013	0.013	0.012	0.011	0.011

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-85

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin

County: Fresno

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.134	0.134	0.135	0.136	0.124	0.134	0.129	0.131	0.120	0.125	0.125	0.125	0.131	0.131	0.132	0.123	0.124	0.126	0.126	0.118
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.117	0.118	0.121	0.115	0.110	0.108	0.108	0.111	0.107	0.108	0.107	0.111	0.115	0.113	0.111	0.108	0.115	0.111	0.104	0.099
Peak 1-Hour Indicator (State)	0.170	0.172	0.171	0.171	0.158	0.165	0.162	0.163	0.158	0.153	0.154	0.152	0.162	0.160	0.159	0.146	0.151	0.152	0.151	0.138
4th High 1-Hr. in 3 Yrs2	0.180	0.170	0.170	0.170	0.150	0.160	0.160	0.160	0.150	0.144	0.146	0.146	0.161	0.161	0.161	0.146	0.151	0.151	0.151	0.135
Max. 8-Hr. Concentration	0.135	0.150	0.125	0.121	0.117	0.130	0.121	0.121	0.111	0.126	0.123	0.127	0.134	0.123	0.131	0.120	0.132	0.116	0.103	0.111
Maximum 1-Hr. Concentration	0.180	0.200	0.190	0.150	0.150	0.180	0.160	0.160	0.144	0.173	0.154	0.147	0.169	0.155	0.165	0.149	0.164	0.152	0.126	0.134
Days Above State 8-Hr. Std.	154	175	171	151	122	129	123	120	108	121	138	141	111	150	140	178	172	154	97	76
Days Above Nat. 8-Hr. Std.	94	112	113	92	55	81	69	59	55	63	78	75	69	83	79	94	95	97	23	29
Days Above State 1-Hr. Std.	118	127	130	109	79	94	86	81	65	81	96	95	79	95	92	108	106	108	29	51

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			162	204	297	152	125	190	127	126	144	124	149	164	139	204	111	93	79	109
Max. 24-Hr. Concentration (Nat)			162	204	297	152	125	190	127	126	144	124	141	162	138	193	106	109	79	106
Max. Annual Average (State)				49.3	65.5	60.0	52.1	53.0	38.1	48.9	39.8	46.7	39.8	46.9	41.0	43.3	43.4	44.0	40.5	39.1
Max. Annual Average (Nat)			45.8	73.9	67.6	60.0	52.2	53.1	49.7	48.8	39.3	46.7	39.3	47.5	41.4	50.2	52.5	43.4	40.0	38.7
Calc Days Above State 24-Hr Std				176	196	185	178	152	72	137	89	107	91	119	72	98	123	128	94	113
Calc Days Above Nat 24-Hr Std				0	26	0	0	6	0	0	0	0	0	0	0	6	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														136.0	160.0	110.0	99.7	79.9	77.0	86.0
Max. 24-Hr. Concentration (Nat)														136.0	160.0	110.0	84.0	63.0	71.0	86.0
98th Percentile of 24-Hr Conc.														120.0	108.0	76.0	77.0	56.0	52.4	74.0
Annual Average (State)														23.4			21.3	17.8	17.0	19.7
Avg. of Qtrly. Means (Nat)														27.7	18.4	19.8	21.6	17.9	17.0	17.0

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	13.9	13.5	13.8	13.7	13.9	10.2	10.2	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	5.8	5.3	4.8	4.1	3.6
Max. 1-Hr. Concentration	21.0	15.0	19.0	23.0	15.0	15.0	13.0	13.0	15.0	12.0	10.1	9.9	10.3	11.9	9.0	6.7	6.1	5.0	3.9	4.1
Max. 8-Hr. Concentration	16.3	10.9	16.5	13.1	10.3	10.4	7.6	9.3	8.9	9.1	6.8	7.5	8.0	7.7	6.2	4.6	4.5	4.1	2.9	3.0
Days Above State 8-Hr. Std.	12	3	3	17	3	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	8	3	4	13	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.148	0.145	0.144	0.151	0.156	0.129	0.123	0.121	0.124	0.124	0.115	0.107	0.100	0.107	0.106	0.102	0.093	0.095	0.090	0.087
Max. 1-Hr. Concentration	0.190	0.150	0.210	0.190	0.160	0.120	0.110	0.120	0.119	0.111	0.109	0.103	0.112	0.108	0.094	0.090	0.089	0.092	0.077	0.084
Max. Annual Average	0.019	0.030	0.032	0.032	0.026	0.025	0.023	0.023	0.023	0.022	0.021	0.021	0.020	0.024	0.021	0.021	0.020	0.020	0.018	0.017

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02								
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00		
Max. 24-Hr. Concentration	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00						0.00		

Table A-86

San Joaquin Valley Air Basin

County: Kern

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.122	0.144	0.144	0.137	0.132	0.132	0.127	0.126	0.127	0.134	0.136	0.139	0.134	0.132	0.139	0.121	0.121	0.127	0.127	0.124
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.114	0.116	0.118	0.116	0.112	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.111	0.111	0.109	0.112	0.115	0.116	0.113
Peak 1-Hour Indicator (State)	0.159	0.163	0.167	0.167	0.164	0.166	0.160	0.153	0.159	0.164	0.163	0.166	0.160	0.152	0.150	0.142	0.143	0.147	0.145	0.144
4th High 1-Hr. in 3 Yrs2	0.160	0.160	0.170	0.180	0.170	0.160	0.160	0.160	0.160	0.164	0.165	0.164	0.158	0.154	0.154	0.138	0.142	0.150	0.151	0.149
Max. 8-Hr. Concentration	0.126	0.131	0.127	0.136	0.123	0.120	0.115	0.125	0.129	0.134	0.137	0.118	0.136	0.112	0.117	0.115	0.120	0.127	0.126	0.113
Maximum 1-Hr. Concentration	0.160	0.170	0.170	0.180	0.170	0.160	0.150	0.160	0.175	0.168	0.165	0.146	0.165	0.140	0.151	0.138	0.151	0.156	0.155	0.133
Days Above State 8-Hr. Std.	154	158	174	163	165	158	154	162	151	153	146	131	115	142	141	153	146	161	162	116
Days Above Nat. 8-Hr. Std.	94	112	124	112	96	107	100	98	101	104	109	55	75	88	82	85	89	116	103	54
Days Above State 1-Hr. Std.	99	124	134	132	120	119	106	110	114	115	114	66	81	105	95	95	95	122	102	69

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			206	237	287	189	186	131	192	195	153	137	166	186	153	216	194	134	93	109
Max. 24-Hr. Concentration (Nat)			206	237	287	189	183	130	190	195	153	228	159	183	145	205	189	136	85	107
Max. Annual Average (State)					80.1	70.0	62.4	55.8	41.5	57.9	54.1	42.9	40.5	60.1	53.9	51.3	59.9	52.3	43.0	43.4
Max. Annual Average (Nat)			74.3	79.3	79.3	76.3	55.2	56.9	46.4	58.2	54.1	46.1	38.7	59.5	53.1	54.4	59.2	52.4	43.1	43.2
Calc Days Above State 24-Hr Std					292	225	246	178	106	184	204	80	95	173	158	133	256	167	113	119
Calc Days Above Nat 24-Hr Std				23	31	18	8	0	0	3	0	1	0	8	0	9	6	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														134.8	112.7	154.7	104.3	84.5	72.8	102.1
Max. 24-Hr. Concentration (Nat)														134.8	112.7	154.7	89.6	67.8	70.0	85.7
98th Percentile of 24-Hr Conc.														111.3	95.4	95.9	80.4	51.9	53.9	74.9
Annual Average (State)															22.6	20.8	24.1	24.8	18.2	22.4
Avg. of Qtrly. Means (Nat)														26.2	22.6	21.8	24.1	19.7	18.9	19.9

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	7.3	7.0	7.4	8.8	9.5	9.5	8.5	6.8	5.4	5.3	5.1	4.7	4.1	4.2	5.3	4.8	4.6	3.0	2.7	2.5
Max. 1-Hr. Concentration	14.0	10.0	12.0	14.0	13.0	13.0	11.0	8.0	8.8	7.8	8.7	6.1	5.7	10.5	10.1	5.8	4.5	4.5	4.1	3.2
Max. 8-Hr. Concentration	8.8	6.9	8.9	11.0	8.6	8.1	5.8	6.1	6.4	6.2	7.7	4.0	3.9	4.5	5.4	3.5	2.5	3.7	2.6	2.2
Days Above State 8-Hr. Std.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.125	0.125	0.128	0.133	0.136	0.131	0.120	0.114	0.110	0.109	0.105	0.103	0.096	0.098	0.100	0.109	0.107	0.106	0.094	0.087
Max. 1-Hr. Concentration	0.120	0.100	0.120	0.130	0.140	0.110	0.110	0.100	0.089	0.109	0.110	0.081	0.100	0.107	0.089	0.115	0.107	0.085	0.083	0.078
Max. Annual Average	0.030	0.029	0.032	0.033	0.031	0.030	0.027	0.017	0.017	0.029	0.029	0.024	0.022	0.027	0.024	0.022	0.024	0.020	0.017	0.021

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.09	0.08	0.07	0.06	0.06	0.04	0.04	0.03	0.02	0.02	0.03	0.03		0.01	0.02	0.02				
Max. Annual Average	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00				
Max. 24-Hr. Concentration	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.00	0.01				

Table A-87

A portion of Kern County lies within the Mojave Desert Air Basin.

San Joaquin Valley Air Basin

County: Kings

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.109	0.110	0.106	0.105	0.103	0.100	0.094	0.094	0.102	0.098	0.126	0.124	0.123	0.109	0.115	0.113	0.114	0.107	0.106	0.100
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.088	0.088	0.088	0.096	0.091	0.088	0.080	0.080			0.096	0.097	0.105	0.099	0.102	0.098	0.099	0.095	0.093	0.088
Peak 1-Hour Indicator (State)	0.124	0.125	0.127	0.123	0.119	0.112	0.106	0.108	0.110	0.104	0.136	0.136	0.137	0.123	0.127	0.124	0.126	0.120	0.119	0.112
4th High 1-Hr. in 3 Yrs2	0.120	0.130	0.140	0.130	0.130	0.110	0.100	0.110	0.113	0.110	0.138	0.138	0.138	0.128	0.128	0.124	0.124	0.121	0.121	0.113
Max. 8-Hr. Concentration	0.096	0.104	0.107	0.112	0.092	0.093	0.078	0.093	0.102	0.085	0.121	0.106	0.113	0.111	0.110	0.107	0.105	0.100	0.094	0.098
Maximum 1-Hr. Concentration	0.110	0.130	0.150	0.130	0.100	0.110	0.100	0.110	0.119	0.096	0.144	0.126	0.143	0.140	0.124	0.127	0.125	0.120	0.121	0.120
Days Above State 8-Hr. Std.	6	33	101	57	29	40	8	18	71	26	142	88	66	95	112	64	86	71	55	38
Days Above Nat. 8-Hr. Std.	1	14	28	10	3	9	0	2	12	1	81	26	31	25	51	18	27	15	9	4
Days Above State 1-Hr. Std.	1	19	34	13	4	15	1	2	9	2	78	23	27	28	48	21	29	19	7	6

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			170	213	439	279	178	239	129	279	143	199	149	185	137	221	174	150	219	137
Max. 24-Hr. Concentration (Nat)			159	202	439	279	167	239	125	279	143	199	146	174	128	185	168	150	217	131
Max. Annual Average (State)				67.0	58.8	62.9	54.7	56.3	49.6	52.9	40.9	47.3		53.1	51.3		55.4	47.5	43.6	42.6
Max. Annual Average (Nat)			58.0	67.0	63.9	67.0	56.7	56.3	50.1	52.9	52.0	48.2	34.8	52.2	50.2	57.4	53.5	46.7	47.9	40.3
Calc Days Above State 24-Hr Std				208	157	189	172	170	166	174	115	102		135	132		172	149	100	126
Calc Days Above Nat 24-Hr Std				29	14	14	6	20	0	12	0	6		6	0	14	6	0	7	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														53.0	76.0	123.2	90.7	55.1	61.0	92.5
Max. 24-Hr. Concentration (Nat)														53.0	76.0	123.2	90.7	55.1	61.0	92.5
98th Percentile of 24-Hr Conc.																89.5	65.1	42.2	49.4	74.5
Annual Average (State)																		16.2		17.5
Avg. of Qtrly. Means (Nat)															16.4	19.2	21.5	16.3	17.5	17.5

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator									0.087	0.094	0.091	0.091	0.081	0.084	0.073	0.068	0.073	0.073	0.072	0.071
Max. 1-Hr. Concentration									0.082	0.094	0.066	0.080	0.086	0.086	0.072	0.096	0.067	0.076	0.069	0.072
Max. Annual Average									0.015	0.015		0.014	0.014		0.014		0.014	0.013	0.012	0.012

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-88

San Joaquin Valley Air Basin

County: Madera

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)				0.108	0.107	0.107	0.103	0.111	0.111	0.114	0.111		0.110	0.106	0.105	0.101	0.102	0.101	0.102	0.096
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)						0.093	0.091	0.096	0.091	0.093	0.093			0.083	0.089	0.088	0.091	0.093	0.089	0.082
Peak 1-Hour Indicator (State)				0.119	0.112	0.117	0.113	0.125	0.124	0.127	0.122		0.122	0.115	0.110	0.105	0.111	0.114	0.115	0.106
4th High 1-Hr. in 3 Yrs2			0.130	0.120	0.120	0.120	0.120	0.130	0.130	0.130	0.121	0.085	0.123	0.118	0.117	0.104	0.115	0.119	0.119	0.103
Max. 8-Hr. Concentration			0.106	0.101	0.098	0.101	0.097	0.110	0.086	0.102	0.111	0.080	0.116	0.095	0.096	0.093	0.110	0.102	0.084	0.081
Maximum 1-Hr. Concentration			0.130	0.120	0.110	0.130	0.120	0.150	0.103	0.117	0.134	0.085	0.127	0.118	0.104	0.115	0.141	0.120	0.097	0.095
Days Above State 8-Hr. Std.			33	62	33	69	61	72	26	52	76	4	45	46	50	53	66	67	25	19
Days Above Nat. 8-Hr. Std.			8	15	13	17	12	26	1	15	28	0	12	10	9	13	18	14	0	0
Days Above State 1-Hr. Std.			11	15	6	24	15	28	4	16	28	0	15	12	8	15	21	15	3	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			108	162	174	118	96	128	105	111	89									
Max. 24-Hr. Concentration (Nat)			108	162	174	118	96	128	105	111	89									
Max. Annual Average (State)			52.7	53.7		51.7	43.6	47.1	40.4	41.9										
Max. Annual Average (Nat)			52.7	53.7	53.5	52.0	43.6	47.1	40.1	41.9	36.8									
Calc Days Above State 24-Hr Std			159	148		165	118	138	78	125										
Calc Days Above Nat 24-Hr Std			0	6	7	0	0	0	0	0										

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator												0.088	0.053	0.068	0.066	0.066	0.060	0.056	0.055	0.053
Max. 1-Hr. Concentration												0.077	0.060	0.084	0.060	0.060	0.058	0.054	0.053	0.057
Max. Annual Average													0.011	0.014	0.013	0.011	0.012	0.010		0.010

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Joaquin Valley Air Basin

County: Merced

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)							0.112	0.111	0.111	0.113	0.114	0.114	0.118	0.123	0.120	0.113	0.113	0.118	0.119	0.115
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)								0.098	0.098	0.100	0.102	0.094	0.096	0.097	0.106	0.101	0.101	0.102	0.102	0.095
Peak 1-Hour Indicator (State)							0.126	0.123	0.122	0.124	0.127	0.129	0.132	0.133	0.132	0.122	0.125	0.124	0.124	0.119
4th High 1-Hr. in 3 Yrs2							0.130	0.130	0.120	0.125	0.125	0.125	0.131	0.132	0.132	0.120	0.121	0.122	0.122	0.118
Max. 8-Hr. Concentration						0.111	0.107	0.110	0.107	0.114	0.116	0.095	0.129	0.117	0.112	0.105	0.125	0.110	0.109	0.093
Maximum 1-Hr. Concentration						0.130	0.120	0.130	0.123	0.130	0.131	0.102	0.143	0.132	0.120	0.113	0.138	0.122	0.114	0.100
Days Above State 8-Hr. Std.						17	93	73	91	94	101	10	77	110	95	88	118	113	74	37
Days Above Nat. 8-Hr. Std.						12	40	19	26	36	44	1	35	40	37	29	56	54	15	3
Days Above State 1-Hr. Std.						13	39	22	31	38	44	1	37	42	32	26	55	54	14	6

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			93	148	211	145	98	121	131	100	61			143	112	117	88	75	57	75
Max. 24-Hr. Concentration (Nat)			93	148	211	145	98	121	131	100	61			134	104	113	85	74	56	70
Max. Annual Average (State)				52.0	53.4	52.4	45.8	42.5	39.4	38.7					36.1		39.6	32.7	28.7	28.6
Max. Annual Average (Nat)			33.8	52.0	53.2	52.4	45.9	42.5	39.2	38.7	30.8			47.7	34.9	39.1	38.8	32.1	27.9	28.2
Calc Days Above State 24-Hr Std				107	148	152	139	109	61	96					70		85	44	12	29
Calc Days Above Nat 24-Hr Std				0	6	0	0	0	0	0					0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														108.7	86.1	80.3	66.0	46.7	53.1	53.9
Max. 24-Hr. Concentration (Nat)														108.7	86.1	80.3	66.0	46.7	53.1	53.9
98th Percentile of 24-Hr Conc.														91.9			55.1	44.2	43.0	48.3
Annual Average (State)																	18.7	15.7	15.2	14.1
Avg. of Qtrly. Means (Nat)															16.7		18.8	15.7	15.2	14.1

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration						10.0	9.0													
Max. 8-Hr. Concentration						5.4	4.8													
Days Above State 8-Hr. Std.						0	0													
Days Above Nat. 8-Hr. Std.						0	0													

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator							0.075	0.080	0.080	0.078	0.076	0.076	0.075	0.074		0.079	0.072	0.070	0.066	0.063
Max. 1-Hr. Concentration						0.090	0.070	0.090	0.076	0.073	0.071	0.072	0.063	0.078		0.066	0.068	0.063	0.059	0.062
Max. Annual Average								0.014	0.013	0.012	0.012	0.013	0.012				0.012	0.012	0.011	0.011

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

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San Joaquin Valley Air Basin

County: San Joaquin

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.123	0.114	0.111	0.109	0.103	0.104	0.102	0.101	0.101	0.113	0.106	0.107	0.102	0.108	0.108	0.104	0.100	0.100	0.099	0.087
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.101	0.097	0.098	0.093	0.090	0.087	0.088	0.088	0.087	0.086	0.085	0.087	0.087	0.087	0.088	0.084	0.081	0.081	0.081	0.073
Peak 1-Hour Indicator (State)	0.136	0.134	0.134	0.133	0.133	0.121	0.119	0.118	0.119	0.122	0.120	0.122	0.124	0.123	0.121	0.118	0.113	0.114	0.115	0.100
4th High 1-Hr. in 3 Yrs2	0.150	0.140	0.140	0.130	0.130	0.120	0.120	0.110	0.119	0.124	0.124	0.119	0.115	0.118	0.118	0.118	0.111	0.104	0.104	0.099
Max. 8-Hr. Concentration	0.115	0.110	0.103	0.103	0.102	0.095	0.090	0.097	0.101	0.107	0.096	0.099	0.100	0.113	0.094	0.092	0.096	0.089	0.097	0.086
Maximum 1-Hr. Concentration	0.140	0.160	0.130	0.120	0.130	0.120	0.110	0.130	0.128	0.134	0.140	0.119	0.126	0.144	0.122	0.114	0.108	0.104	0.109	0.099
Days Above State 8-Hr. Std.	51	83	48	19	22	45	41	26	33	30	56	14	31	33	19	19	26	23	10	10
Days Above Nat. 8-Hr. Std.	17	30	21	4	7	10	10	4	6	9	14	3	7	10	3	2	3	2	1	1
Days Above State 1-Hr. Std.	31	54	37	10	17	26	21	12	16	16	26	6	19	16	9	9	12	6	5	3

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			115	146	251	140	145	104	109	109	127	130	115	155	110	147	91	90	61	84
Max. 24-Hr. Concentration (Nat)			115	146	251	140	145	104	109	266	127	130	106	150	104	143	139	116	176	79
Max. Annual Average (State)					51.4				37.0		27.4	29.7	30.1	37.7	33.7	36.6	36.1	28.4	29.4	29.8
Max. Annual Average (Nat)			37.2	50.4	51.2	52.4	44.8	39.1	36.9	40.1	29.2	37.6	29.1	36.3	29.3	30.7	29.6	26.3	25.4	28.9
Calc Days Above State 24-Hr Std					128				63		19	30	50	67	60	64	58	20	18	47
Calc Days Above Nat 24-Hr Std				0	6	0	0	0	0		0	0	0	0	0	0	0	0	1	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														101.0	78.0	76.0	64.0	45.0	41.0	70.0
Max. 24-Hr. Concentration (Nat)														101.0	78.0	76.0	64.0	45.0	41.0	63.0
98th Percentile of 24-Hr Conc.														79.0	55.0	58.0	50.0	41.0	36.0	44.0
Annual Average (State)														19.7			16.7	13.6	13.2	12.5
Avg. of Qtrly. Means (Nat)														19.8	15.5	13.9	16.7	13.6	13.2	12.5

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	13.6	13.9	14.1	12.2	13.7	13.2	11.5	9.2	7.6	7.5	7.3	6.2	6.1	6.2	6.9	4.8	4.1	3.7	3.3	2.9
Max. 1-Hr. Concentration	19.0	16.0	14.0	16.0	17.0	15.0	11.0	10.0	11.3	10.3	11.0	7.7	10.2	11.3	8.1	8.4	6.0	5.8	3.7	4.3
Max. 8-Hr. Concentration	12.1	12.9	11.4	11.0	11.5	11.4	8.3	6.9	7.8	6.2	7.6	4.2	7.9	7.8	6.6	6.0	3.2	3.1	2.5	2.9
Days Above State 8-Hr. Std.	9	1	1	6	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	8	1	1	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.122	0.122	0.126	0.122	0.130	0.134	0.132	0.132	0.131	0.127	0.113	0.102	0.097	0.103	0.102	0.100	0.085	0.086	0.082	0.082
Max. 1-Hr. Concentration	0.160	0.100	0.110	0.130	0.120	0.110	0.190	0.160	0.144	0.119	0.088	0.090	0.102	0.106	0.099	0.087	0.077	0.088	0.079	0.087
Max. Annual Average	0.023	0.025	0.026	0.025	0.026	0.025	0.023	0.024	0.024	0.022	0.023	0.022	0.023	0.015	0.021	0.019	0.021	0.018	0.017	0.017

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03	0.03	0.04	0.03																
Max. Annual Average	0.00	0.00	0.00	0.00																
Max. 24-Hr. Concentration	0.01	0.02	0.01	0.01																

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San Joaquin Valley Air Basin

County: Stanislaus

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.130	0.122	0.120	0.120	0.117	0.114	0.109	0.107	0.106	0.113	0.111	0.114	0.116	0.116	0.117	0.108	0.114	0.109	0.106	0.103
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.102	0.100	0.097	0.102	0.099	0.095	0.092	0.086	0.093	0.095	0.096	0.096	0.098	0.095	0.096	0.091	0.095	0.096	0.094	0.086
Peak 1-Hour Indicator (State)	0.151	0.149	0.143	0.141	0.131	0.127	0.121	0.119	0.120	0.127	0.129	0.132	0.132	0.131	0.127	0.116	0.124	0.125	0.122	0.111
4th High 1-Hr. in 3 Yrs2	0.150	0.150	0.150	0.150	0.130	0.130	0.120	0.130	0.120	0.125	0.125	0.125	0.131	0.131	0.131	0.111	0.123	0.119	0.119	0.111
Max. 8-Hr. Concentration	0.102	0.127	0.126	0.120	0.110	0.102	0.102	0.108	0.100	0.111	0.111	0.100	0.125	0.104	0.107	0.100	0.113	0.100	0.089	0.094
Maximum 1-Hr. Concentration	0.130	0.150	0.140	0.130	0.150	0.120	0.120	0.130	0.123	0.131	0.129	0.120	0.153	0.119	0.131	0.124	0.135	0.119	0.106	0.115
Days Above State 8-Hr. Std.	53	105	94	67	61	51	55	37	49	50	68	37	59	33	41	38	61	63	28	33
Days Above Nat. 8-Hr. Std.	21	68	44	26	22	13	11	13	12	21	20	8	29	12	10	11	25	18	4	6
Days Above State 1-Hr. Std.	39	77	64	41	32	33	27	19	28	28	39	15	35	19	16	16	31	21	6	15

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				148	171	157	150	154	160	120	133	119	135	162	119	160	97	88	79	97
Max. 24-Hr. Concentration (Nat)				148	171	157	150	154	160	240	133	119	125	157	112	158	93	87	80	93
Max. Annual Average (State)					49.6	53.0	43.6	42.0	41.1	41.2	32.0	37.1	31.9	42.8	35.4	40.5	37.2	31.4	30.7	29.8
Max. Annual Average (Nat)				49.4	49.1	53.7	43.6	52.4	41.1	41.3	32.0	37.1	35.4	37.1	34.9	39.7	36.9	30.6	30.0	29.3
Calc Days Above State 24-Hr Std					135	148	106	98	89	100	47	56	47	90	68	61	76	48	36	51
Calc Days Above Nat 24-Hr Std					6	6	0	0	6	1	0	0	0	0	0	3	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														108.0	77.0	95.0	87.1	66.9	67.3	89.2
Max. 24-Hr. Concentration (Nat)														108.0	77.0	95.0	83.0	64.0	53.0	80.0
98th Percentile of 24-Hr Conc.														100.0	71.0	69.0	69.0	47.0	45.0	55.0
Annual Average (State)															18.7	15.6	18.7	14.5	13.6	14.5
Avg. of Qtrly. Means (Nat)														24.9	18.7	15.6	18.7	14.5	13.6	13.9

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	10.4	10.5	10.6	11.9	12.4	12.4	10.1	9.0	7.7	7.4	7.0	6.0	5.5	6.1	7.0	6.4	5.3	4.5	4.2	3.7
Max. 1-Hr. Concentration	18.0	12.0	17.0	17.0	17.0	19.0	10.0	11.0	9.5	11.4	9.2	7.1	9.4	11.4	8.0	7.8	5.2	5.3	4.6	3.7
Max. 8-Hr. Concentration	11.3	8.6	13.1	13.4	10.9	10.8	6.5	8.6	6.4	5.7	6.5	5.0	7.3	6.4	6.0	6.0	4.5	3.8	3.0	2.9
Days Above State 8-Hr. Std.	4	0	2	11	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	0	1	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.121	0.126	0.129	0.126	0.128	0.119	0.109	0.108	0.102	0.102	0.095	0.096	0.089	0.103	0.098	0.100	0.081	0.087	0.080	0.080
Max. 1-Hr. Concentration	0.130	0.120	0.130	0.140	0.100	0.110	0.100	0.110	0.093	0.093	0.087	0.093	0.088	0.103	0.079	0.087	0.083	0.091	0.065	0.072
Max. Annual Average	0.024	0.024	0.027		0.026	0.024	0.022	0.023	0.023	0.022	0.022	0.021	0.018	0.022	0.019	0.018	0.017	0.017	0.015	0.014

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.02	0.02	0.03	0.03	0.02	0.02														
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00														
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.00	0.01														

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San Joaquin Valley Air Basin

County: Tulare

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.123	0.126	0.125	0.124	0.120	0.120	0.112	0.121	0.126	0.123	0.120	0.115	0.119	0.118	0.117	0.114	0.115	0.120	0.119	0.119
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.108	0.108	0.111	0.111	0.106	0.104	0.101	0.103	0.106	0.107	0.105	0.100	0.102	0.102	0.102	0.104	0.105	0.107	0.105	0.105
Peak 1-Hour Indicator (State)	0.141	0.145	0.145	0.142	0.135	0.132	0.124	0.136	0.145	0.144	0.140	0.130	0.134	0.134	0.130	0.123	0.124	0.126	0.125	0.125
4th High 1-Hr. in 3 Yrs2	0.140	0.150	0.150	0.150	0.140	0.140	0.130	0.140	0.150	0.150	0.140	0.132	0.139	0.127	0.129	0.126	0.126	0.126	0.126	0.126
Max. 8-Hr. Concentration	0.121	0.133	0.117	0.121	0.115	0.111	0.106	0.125	0.119	0.112	0.111	0.106	0.122	0.112	0.108	0.111	0.117	0.115	0.103	0.112
Maximum 1-Hr. Concentration	0.160	0.180	0.150	0.160	0.140	0.130	0.130	0.150	0.154	0.132	0.140	0.125	0.148	0.127	0.129	0.135	0.140	0.129	0.133	0.127
Days Above State 8-Hr. Std.	144	173	153	135	135	129	133	137	138	131	131	118	104	155	136	154	147	155	132	106
Days Above Nat. 8-Hr. Std.	99	120	97	70	64	66	65	69	82	59	78	54	58	88	76	71	93	92	78	59
Days Above State 1-Hr. Std.	98	121	100	76	63	65	63	76	78	66	81	50	63	84	78	73	86	91	60	54

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			145	206	285	177	122	108	105	128	115	96	167	160	136	151	111	99	82	124
Max. 24-Hr. Concentration (Nat)			141	204	285	175	122	108	104	125	115	96	160	152	130	143	110	100	82	101
Max. Annual Average (State)								52.8		52.7	44.5	41.6	40.4	55.8	53.7	52.3	52.4	43.0	41.4	44.5
Max. Annual Average (Nat)			63.2	69.2	79.2	64.7	50.5	52.8	47.5	53.0	44.5	41.5	39.9	54.9	52.7	51.9	51.6	42.6	41.2	44.3
Calc Days Above State 24-Hr Std								183		163	148	65	102	182	196	168	179	108	91	146
Calc Days Above Nat 24-Hr Std				12	29	7		0	0	0	0	0	6	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														123.0	105.0	97.0	82.0	58.9	68.6	95.5
Max. 24-Hr. Concentration (Nat)														123.0	105.0	97.0	76.0	49.0	60.0	84.0
98th Percentile of 24-Hr Conc.														114.0	103.0	96.0	70.0	47.0	54.0	65.0
Annual Average (State)															23.9		23.2	19.7		19.9
Avg. of Qtrly. Means (Nat)														27.6	23.9	22.5	23.2	18.2	17.0	18.8

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.7	5.9	6.1	6.4	6.5	6.5	6.0	5.2	4.4	4.5	4.5	4.2	4.0	4.1	4.1	4.0	3.5	3.0	2.7	2.5
Max. 1-Hr. Concentration	12.0	13.0	14.0	12.0	11.0	14.0	10.0	7.0	8.7	9.3	5.3	7.3	7.4	7.9	5.9	5.7	4.9	4.7	3.7	3.8
Max. 8-Hr. Concentration	6.9	5.8	8.0	6.4	6.7	6.1	4.8	4.0	4.4	4.4	4.0	4.1	3.8	4.1	4.2	3.7	2.9	3.0	2.2	2.6
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.117	0.114	0.118	0.138	0.137	0.130	0.109	0.111	0.113	0.115	0.119	0.115	0.089	0.100	0.098	0.096	0.092	0.096	0.097	0.084
Max. 1-Hr. Concentration	0.110	0.110	0.170	0.210	0.100	0.130	0.100	0.120	0.142	0.112	0.077	0.095	0.081	0.092	0.079	0.075	0.095	0.087	0.078	0.069
Max. Annual Average	0.025	0.019	0.022	0.020	0.021	0.022	0.020	0.023		0.023	0.018	0.019	0.017	0.021	0.018	0.018	0.019	0.018	0.016	0.016

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03	0.04	0.02	0.02																
Max. Annual Average	0.00	0.00	0.00	0.00																
Max. 24-Hr. Concentration	0.01	0.02	0.01	0.01																

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South Central Coast Air Basin

County: San Luis Obispo

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.086	0.087	0.088	0.098	0.095	0.094	0.089	0.084	0.084	0.086	0.100	0.100	0.106	0.103	0.104	0.080	0.084	0.082	0.082	0.081
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.072	0.072	0.075	0.073	0.075	0.083	0.078	0.075	0.074	0.074	0.080	0.079	0.086	0.082	0.081	0.072	0.073	0.074	0.073	0.071
Peak 1-Hour Indicator (State)	0.099	0.098	0.098	0.108	0.105	0.105	0.101	0.101	0.100	0.098	0.108	0.108	0.115	0.114	0.114	0.093	0.094	0.094	0.092	0.093
4th High 1-Hr. in 3 Yrs2	0.100	0.100	0.100	0.120	0.110	0.110	0.100	0.100	0.098	0.097	0.107	0.107	0.114	0.113	0.113	0.092	0.092	0.092	0.092	0.092
Max. 8-Hr. Concentration	0.096	0.111	0.086	0.122	0.082	0.101	0.098	0.088	0.089	0.087	0.117	0.077	0.113	0.083	0.080	0.081	0.083	0.089	0.076	0.085
Maximum 1-Hr. Concentration	0.100	0.130	0.100	0.150	0.100	0.110	0.110	0.100	0.101	0.108	0.141	0.090	0.129	0.099	0.084	0.094	0.093	0.097	0.086	0.099
Days Above State 8-Hr. Std.	9	18	18	38	22	20	8	13	14	25	41	8	76	15	5	13	15	12	7	5
Days Above Nat. 8-Hr. Std.	3	2	1	8	0	2	1	2	1	1	10	0	21	0	0	0	0	1	0	1
Days Above State 1-Hr. Std.	5	3	6	8	2	4	3	4	2	7	14	0	25	2	0	0	0	2	0	1

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			63	63	79	75	135	141	78	73	48	75	55	58	80	70	55	70	146	66
Max. 24-Hr. Concentration (Nat)			63	63	79	75	135	141	78	125	98	99	70	90	111	89	178	78	146	63
Max. Annual Average (State)					21.0	24.4	30.4	28.8	22.3	21.4	18.7	20.9	17.7	19.0	21.3	24.8	21.1	20.2	31.4	19.2
Max. Annual Average (Nat)			23.8	29.2	26.3	26.5	43.1	42.8	22.4	39.9	31.7	23.9	25.2	27.2	33.8	29.1	43.2	24.5	31.4	18.6
Calc Days Above State 24-Hr Std					0	6	51	53	6	18	0	7	6	0	13	18	7	6	61	0
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														27.5	52.7	57.7	28.0	29.2	30.7	29.2
Max. 24-Hr. Concentration (Nat)														27.5	52.7	57.7	28.0	29.2	30.7	29.2
98th Percentile of 24-Hr Conc.														27.3	41.0	50.7	25.7	21.7	19.6	17.3
Annual Average (State)														9.6		10.1	9.2	8.2	8.3	7.1
Avg. of Qtrly. Means (Nat)														9.6	10.3	10.1	9.3	8.2	8.3	

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	5.2	5.2	4.7	4.9	5.1	4.8	4.2	3.6	3.2	2.9	2.9	2.6	2.6	2.7	2.7	2.7	2.2	2.0	1.8	1.7
Max. 1-Hr. Concentration	10.0	10.0	10.0	10.0	10.0	8.0	8.0	9.0	6.1	5.7	5.0	6.4	4.4	5.3	3.9	8.3	3.5	3.1	2.6	2.6
Max. 8-Hr. Concentration	4.9	3.9	4.3	6.3	4.1	3.3	3.1	3.2	3.2	3.1	2.9	2.6	2.3	3.1	2.4	2.0	2.4	1.5	1.5	1.3
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.089	0.090	0.085	0.085	0.084	0.078	0.074	0.072	0.070	0.070	0.065	0.063	0.064	0.073	0.070	0.069	0.060	0.062	0.061	0.057
Max. 1-Hr. Concentration	0.090	0.080	0.090	0.090	0.070	0.080	0.060	0.070	0.069	0.069	0.060	0.071	0.061	0.070	0.059	0.061	0.060	0.064	0.051	0.052
Max. Annual Average	0.015	0.015	0.016	0.016	0.010	0.011	0.015	0.014	0.014	0.013	0.013	0.012	0.012	0.014	0.012	0.012	0.011	0.009	0.009	0.007

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.32	0.32	0.25	0.16	0.16	0.14	0.13	0.13	0.03	0.16	0.17	0.16	0.16	0.14	0.14	0.14	0.16	0.14	0.13	0.14
Max. Annual Average	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.06	0.03	0.04	0.02	0.09	0.02	0.02	0.05	0.01	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.02	0.02	0.03	0.01

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South Central Coast Air Basin

County: Santa Barbara

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.111	0.109	0.107	0.109	0.111	0.111	0.108	0.104	0.104	0.107	0.112	0.110	0.101	0.092	0.091	0.090	0.092	0.095	0.093	0.090
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.090	0.087	0.095	0.097	0.099	0.099	0.096	0.091	0.092	0.090	0.094	0.089	0.087	0.082	0.081	0.080	0.082	0.084	0.082	0.078
Peak 1-Hour Indicator (State)	0.135	0.138	0.131	0.139	0.139	0.136	0.129	0.121	0.121	0.122	0.131	0.124	0.116	0.103	0.102	0.100	0.103	0.105	0.102	0.097
4th High 1-Hr. in 3 Yrs2	0.150	0.160	0.130	0.179	0.171	0.165	0.137	0.123	0.129	0.126	0.130	0.130	0.125	0.108	0.107	0.101	0.101	0.103	0.101	0.100
Max. 8-Hr. Concentration	0.128	0.141	0.102	0.176	0.141	0.113	0.125	0.110	0.116	0.118	0.122	0.108	0.120	0.110	0.087	0.106	0.090	0.102	0.102	0.082
Maximum 1-Hr. Concentration	0.160	0.185	0.130	0.220	0.165	0.134	0.140	0.135	0.142	0.143	0.134	0.137	0.130	0.135	0.128	0.117	0.113	0.107	0.109	0.091
Days Above State 8-Hr. Std.	89	82	104	105	94	101	72	63	54	60	61	48	50	34	40	34	37	42	20	13
Days Above Nat. 8-Hr. Std.	26	25	28	28	27	25	17	13	11	16	19	4	6	2	2	3	5	5	2	0
Days Above State 1-Hr. Std.	36	37	43	42	40	38	27	23	23	24	23	10	15	3	6	5	3	7	2	0

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			132	119	96	96	89	90	139	129	78	168	75	52	54	68	50	98	52	87
Max. 24-Hr. Concentration (Nat)			132	119	96	96	89	90	139	129	78	168	73	99	64	66	49	96	52	83
Max. Annual Average (State)			28.7	33.8	36.9	25.7	32.6	29.3	26.8	25.4	28.6	29.7	26.1	29.5	26.6	27.4	24.3	25.2	24.7	22.1
Max. Annual Average (Nat)			28.7	35.9	36.6	36.8	32.6	32.9	32.5	31.1	28.6	29.8	25.0	28.5	24.9	26.5	23.5	24.4	24.1	27.7
Calc Days Above State 24-Hr Std			19	26	25	6	57	41	7	13	18	12	18	12	18	18	0	6	6	6
Calc Days Above Nat 24-Hr Std			0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														24.3	28.7	43.2	21.3	24.0	27.5	29.8
Max. 24-Hr. Concentration (Nat)														24.3	28.7	43.2	21.3	24.0	27.5	29.8
98th Percentile of 24-Hr Conc.																23.4	19.4	16.1	12.9	
Annual Average (State)																10.4	9.5	8.6	7.5	
Avg. of Qtrly. Means (Nat)																10.4	9.6	8.6	7.6	

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	9.9	10.1	9.0	8.8	8.2	7.5	6.4	5.5	5.9	6.0	5.8	5.0	4.8	4.5	4.7	1.6	1.7	2.4	2.1	1.9
Max. 1-Hr. Concentration	18.0	14.0	15.0	11.0	11.0	9.0	12.0	9.0	10.7	7.8	12.6	8.2	8.5	8.2	5.8	5.4	3.4	5.9	4.7	4.0
Max. 8-Hr. Concentration	8.6	7.5	7.4	7.4	5.8	6.4	5.9	4.8	6.5	5.8	4.9	4.1	4.6	4.2	3.1	1.9	1.8	2.3	1.9	1.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.113	0.108	0.094	0.119	0.119	0.120	0.104	0.099	0.089	0.091	0.091	0.085	0.081	0.078	0.081	0.058	0.052	0.063	0.058	0.057
Max. 1-Hr. Concentration	0.150	0.140	0.160	0.120	0.110	0.160	0.100	0.090	0.100	0.113	0.107	0.065	0.089	0.096	0.124	0.113	0.063	0.059	0.063	0.062
Max. Annual Average	0.022	0.017	0.012	0.027	0.015	0.024	0.022	0.022	0.022	0.021	0.019	0.019	0.021	0.022	0.012	0.010	0.011	0.011	0.013	0.012

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.08	0.08	0.07	0.07	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max. Annual Average	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.04	0.04	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00

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South Central Coast Air Basin

County: Ventura

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.155	0.153	0.152	0.150	0.152	0.148	0.138	0.137	0.126	0.138	0.140	0.138	0.129	0.119	0.116	0.111	0.110	0.107	0.104	0.102
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.116	0.129	0.131	0.132	0.130	0.127	0.118	0.115	0.112	0.117	0.119	0.115	0.112	0.106	0.105	0.101	0.097	0.095	0.094	0.091
Peak 1-Hour Indicator (State)	0.178	0.173	0.178	0.173	0.174	0.165	0.159	0.159	0.150	0.162	0.161	0.154	0.144	0.135	0.131	0.125	0.125	0.124	0.118	0.116
4th High 1-Hr. in 3 Yrs2	0.180	0.180	0.180	0.170	0.170	0.170	0.150	0.150	0.146	0.157	0.158	0.152	0.144	0.134	0.132	0.128	0.124	0.124	0.118	0.118
Max. 8-Hr. Concentration	0.145	0.153	0.142	0.166	0.143	0.140	0.123	0.129	0.132	0.144	0.127	0.114	0.151	0.112	0.108	0.113	0.109	0.114	0.098	0.100
Maximum 1-Hr. Concentration	0.180	0.180	0.180	0.230	0.170	0.170	0.150	0.146	0.164	0.169	0.158	0.134	0.174	0.132	0.128	0.129	0.132	0.130	0.122	0.121
Days Above State 8-Hr. Std.	180	161	173	154	139	161	122	92	129	128	128	117	78	83	82	81	63	97	78	62
Days Above Nat. 8-Hr. Std.	120	88	110	94	70	92	57	46	64	67	65	46	30	23	30	24	15	31	17	11
Days Above State 1-Hr. Std.	149	123	135	116	99	107	68	58	88	90	80	59	41	33	38	34	22	41	22	17

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			118	92	133	90	84	118	86	94	93	321	111	86	102	77	100	169	69	74
Max. 24-Hr. Concentration (Nat)			118	92	133	90	84	118	78	94	93	321	110	84	100	78	97	149	69	74
Max. Annual Average (State)			40.3	41.6	36.1	40.0	33.0	29.1	31.6	30.9	29.3	36.5	24.4	28.8	31.2	28.8	28.6	30.0	28.8	25.6
Max. Annual Average (Nat)			40.1	41.5	35.2	39.9	33.2	29.1	31.6	28.4	29.9	37.0	24.4	31.3	31.0	31.5	28.9	30.7	28.1	24.9
Calc Days Above State 24-Hr Std			102	139	66	99	43	30	24	57	29	47	12	13	39	18	19	31	7	12
Calc Days Above Nat 24-Hr Std			0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														64.6	55.3	50.0	46.4	116.0	91.9	51.1
Max. 24-Hr. Concentration (Nat)														64.6	55.3	50.0	46.4	116.0	41.2	42.4
98th Percentile of 24-Hr Conc.														35.4		40.0	35.2	33.4	36.7	26.3
Annual Average (State)																14.9		12.4	12.5	11.7
Avg. of Qtrly. Means (Nat)														13.8		14.9	14.6	14.2	12.6	11.2

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	6.2	5.7	5.7	4.9	4.9	4.7	4.5	3.9	3.6	4.0	4.0	3.9	3.6	3.3	3.4	3.1	2.7	2.7	2.4	
Max. 1-Hr. Concentration	15.0	12.0	9.0	10.0	10.0	9.0	7.0	9.0	7.7	8.9	7.8	7.4	7.2	6.8	6.2	4.4	5.7	7.2	4.2	
Max. 8-Hr. Concentration	7.0	5.7	4.4	4.1	5.0	4.3	3.0	3.7	4.2	4.3	3.4	3.8	3.5	3.6	4.3	3.4	2.3	3.7	2.6	
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.132	0.130	0.123	0.117	0.119	0.120	0.114	0.104	0.104	0.112	0.114	0.110	0.097	0.089	0.086	0.083	0.079	0.073	0.069	0.066
Max. 1-Hr. Concentration	0.130	0.150	0.110	0.120	0.160	0.110	0.100	0.110	0.133	0.127	0.110	0.115	0.097	0.099	0.095	0.080	0.064	0.103	0.071	0.070
Max. Annual Average	0.015	0.016	0.024	0.027	0.025	0.024	0.012	0.023	0.020	0.024	0.015	0.020	0.019	0.017	0.020	0.019	0.017	0.015	0.014	0.015

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Max. 24-Hr. Concentration	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	

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South Coast Air Basin

County: Los Angeles

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.261	0.257	0.241	0.224	0.225	0.222	0.211	0.212	0.202	0.183	0.173	0.170	0.165	0.146	0.146	0.134	0.146	0.153	0.149	0.146
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.222	0.217	0.205	0.192	0.186	0.179	0.177	0.177	0.168	0.156	0.145	0.135	0.133	0.118	0.115	0.105	0.111	0.126	0.125	0.120
Peak 1-Hour Indicator (State)	0.358	0.341	0.316	0.317	0.310	0.304	0.286	0.284	0.279	0.249	0.230	0.229	0.217	0.194	0.193	0.166	0.171	0.182	0.180	0.174
4th High 1-Hr. in 3 Yrs2	0.360	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.223	0.209	0.200	0.188	0.188	0.184	0.169	0.184	0.171	0.173
Max. 8-Hr. Concentration	0.251	0.210	0.258	0.235	0.177	0.183	0.218	0.185	0.208	0.158	0.150	0.130	0.171	0.108	0.146	0.134	0.144	0.152	0.133	0.141
Maximum 1-Hr. Concentration	0.350	0.330	0.340	0.340	0.290	0.320	0.300	0.280	0.300	0.216	0.205	0.170	0.222	0.154	0.174	0.190	0.169	0.194	0.158	0.173
Days Above State 8-Hr. Std.	210	188	201	192	157	151	172	156	138	132	114	101	71	58	76	79	106	113	102	90
Days Above Nat. 8-Hr. Std.	177	158	181	150	131	128	139	108	118	92	68	43	46	19	27	35	56	80	59	51
Days Above State 1-Hr. Std.	209	190	205	192	168	159	174	158	142	127	109	89	68	43	57	70	86	101	80	74

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			138	172	161	151	222	104	127	157	138	116	87	103	105	106	121	117	83	131
Max. 24-Hr. Concentration (Nat)			138	172	161	151	222	104	127	157	138	116	87	103	105	106	121	119	83	131
Max. Annual Average (State)				63.8	54.9	54.9	48.7	47.4	45.3	48.6	45.4	46.1	37.8	56.3	40.0	44.2	37.2	43.1	38.1	43.4
Max. Annual Average (Nat)			67.9	63.8	55.0	65.9	48.8	47.4	45.3	47.7	45.5	46.1	40.6	56.3	46.3	45.3	45.8	44.4	38.1	43.5
Calc Days Above State 24-Hr Std				249	187	183	146	155	145	143	153	149	67	213	92	119	71	118	76	112
Calc Days Above Nat 24-Hr Std				6	6	0	11	0	0	6	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														85.6	92.5	104.0	80.2	121.2	75.6	132.6
Max. 24-Hr. Concentration (Nat)														85.6	92.5	94.7	72.4	121.2	75.6	132.6
98th Percentile of 24-Hr Conc.														53.2	83.0	69.4	57.9	61.3	66.3	54.4
Annual Average (State)															24.0	24.8	24.0	20.3	16.6	17.8
Avg. of Qtrly. Means (Nat)														25.7	24.0	25.2	24.0	22.1	20.0	17.9

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3	7.1
Max. 1-Hr. Concentration	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.5	11.7	15.8	12.2	10.4	7.4
Max. 8-Hr. Concentration	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5	5.9
Days Above State 8-Hr. Std.	57	50	70	70	49	51	39	29	27	17	26	18	13	11	6	0	1	0	0	0
Days Above Nat. 8-Hr. Std.	49	40	63	67	41	41	34	19	19	14	19	13	10	7	3	0	1	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.180	0.168	0.166	0.162	0.157	0.150	0.142
Max. 1-Hr. Concentration	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.170	0.212	0.173	0.251	0.262	0.163	0.157	0.136
Max. Annual Average	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033	0.031

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.09	0.07	0.07	0.06	0.06	0.06	0.11	0.10	0.10	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.04
Max. Annual Average	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Max. 24-Hr. Concentration	0.04	0.02	0.04	0.02	0.04	0.02	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.01

Table A-97

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

South Coast Air Basin

County: Orange

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.191	0.183	0.171	0.167	0.162	0.152	0.145	0.139	0.141	0.125	0.116	0.105	0.105	0.097	0.098	0.098	0.095	0.100	0.101	0.100
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.157	0.152	0.142	0.141	0.138	0.127	0.120	0.114	0.117	0.107	0.100	0.088	0.088	0.084	0.084	0.077	0.080	0.086	0.087	0.086
Peak 1-Hour Indicator (State)	0.274	0.267	0.246	0.235	0.227	0.219	0.205	0.197	0.192	0.165	0.156	0.137	0.141	0.131	0.131	0.115	0.117	0.123	0.123	0.121
4th High 1-Hr. in 3 Yrs2	0.270	0.260	0.240	0.240	0.240	0.220	0.210	0.190	0.190	0.170	0.156	0.138	0.144	0.130	0.132	0.119	0.125	0.131	0.131	0.127
Max. 8-Hr. Concentration	0.158	0.165	0.195	0.167	0.142	0.145	0.158	0.122	0.172	0.109	0.103	0.100	0.115	0.091	0.110	0.097	0.093	0.105	0.097	0.085
Maximum 1-Hr. Concentration	0.250	0.240	0.290	0.260	0.210	0.250	0.220	0.190	0.252	0.160	0.150	0.134	0.182	0.116	0.137	0.125	0.136	0.165	0.120	0.125
Days Above State 8-Hr. Std.	99	80	88	80	77	66	66	57	44	38	35	17	26	11	17	19	15	37	59	13
Days Above Nat. 8-Hr. Std.	62	54	50	44	39	36	35	25	15	8	9	3	6	1	6	4	1	10	12	1
Days Above State 1-Hr. Std.	101	81	96	81	80	71	63	59	46	39	27	13	22	8	14	12	9	19	23	4

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)				88	158	146	88	115	106	172	101	91	81	122	126	93	78	96	74	65
Max. 24-Hr. Concentration (Nat)				88	158	146	88	115	106	172	101	91	81	122	126	93	80	96	74	65
Max. Annual Average (State)				41.7		45.5	34.4	38.3	37.5	43.3	35.2	38.8	35.8	36.7	39.9	26.4	33.5	32.8	34.0	28.1
Max. Annual Average (Nat)				41.7	48.1	45.9	40.0	38.3	37.5	43.5	35.2	38.8	35.8	36.7	39.6	26.5	33.5	32.8	33.9	28.2
Calc Days Above State 24-Hr Std				122		89	31	78	67	86	37	66	72	37	48	18	30	38	42	18
Calc Days Above Nat 24-Hr Std				0	6	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														68.6	113.9	70.8	68.6	115.5	58.9	54.7
Max. 24-Hr. Concentration (Nat)														68.6	113.9	70.8	68.6	115.5	58.9	54.7
98th Percentile of 24-Hr Conc.															66.3	45.6	48.1	51.8	48.2	41.8
Annual Average (State)															14.7		18.6			10.6
Avg. of Qtrly. Means (Nat)															20.3	15.8	18.6	17.3	16.8	14.7

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	11.0	11.3	10.9	11.5	11.5	10.8	9.4	8.8	8.7	8.2	8.5	7.3	6.7	6.4	6.7	6.6	5.8	4.6	4.4	4.1
Max. 1-Hr. Concentration	20.0	21.0	20.0	24.0	19.0	21.0	21.0	15.0	16.1	12.7	12.9	11.9	15.0	11.4	13.8	10.7	10.2	8.4	7.4	6.8
Max. 8-Hr. Concentration	10.4	10.6	12.0	12.1	11.7	8.6	9.4	7.7	8.6	8.0	7.4	6.0	7.1	6.4	6.7	4.7	5.3	5.9	4.1	3.3
Days Above State 8-Hr. Std.	4	3	9	13	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	2	7	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.236	0.240	0.238	0.241	0.235	0.231	0.221	0.220	0.201	0.196	0.188	0.171	0.141	0.143	0.149	0.150	0.124	0.129	0.119	0.115
Max. 1-Hr. Concentration	0.210	0.220	0.280	0.280	0.220	0.200	0.210	0.200	0.230	0.192	0.160	0.145	0.135	0.165	0.139	0.130	0.116	0.158	0.122	0.090
Max. Annual Average	0.045	0.042	0.046	0.047	0.047	0.045	0.039	0.039	0.041	0.039	0.035	0.033	0.034	0.035	0.029	0.027	0.024	0.028	0.025	0.025

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01

Table A-98

South Coast Air Basin

County: Riverside

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.219	0.222	0.216	0.217	0.209	0.207	0.204	0.198	0.178	0.170	0.157	0.153	0.158	0.149	0.147	0.136	0.131	0.137	0.137	0.139
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.197	0.191	0.180	0.180	0.177	0.175	0.169	0.165	0.157	0.149	0.140	0.129	0.127	0.124	0.114	0.111	0.113	0.118	0.117	0.119
Peak 1-Hour Indicator (State)	0.308	0.298	0.276	0.269	0.263	0.261	0.251	0.240	0.225	0.208	0.193	0.187	0.187	0.176	0.171	0.153	0.155	0.159	0.155	0.156
4th High 1-Hr. in 3 Yrs2	0.320	0.290	0.270	0.270	0.270	0.270	0.250	0.240	0.240	0.220	0.200	0.187	0.187	0.170	0.166	0.149	0.149	0.157	0.157	0.157
Max. 8-Hr. Concentration	0.217	0.186	0.241	0.213	0.181	0.196	0.193	0.195	0.208	0.161	0.162	0.148	0.169	0.123	0.126	0.135	0.130	0.146	0.116	0.132
Maximum 1-Hr. Concentration	0.270	0.290	0.280	0.270	0.290	0.240	0.260	0.260	0.253	0.213	0.203	0.187	0.195	0.144	0.164	0.152	0.160	0.169	0.156	0.149
Days Above State 8-Hr. Std.	177	178	198	190	163	166	180	171	163	145	141	160	119	123	129	136	127	129	123	116
Days Above Nat. 8-Hr. Std.	146	151	152	148	122	132	135	124	127	99	84	106	65	56	70	73	67	85	62	54
Days Above State 1-Hr. Std.	174	175	191	182	150	155	159	157	144	134	107	128	80	83	93	97	93	102	84	73

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			252	252	250	179	126	231	161	219	162	163	116	153	139	219	126	159	133	119
Max. 24-Hr. Concentration (Nat)			252	252	250	179	126	231	161	219	185	163	116	153	139	219	130	164	137	123
Max. Annual Average (State)				94.0	78.2	76.0	62.0	72.5	65.5	68.8	61.5	65.3		72.2	60.1	62.9	56.2	55.1	53.5	50.4
Max. Annual Average (Nat)			103.7	93.0	78.2	76.1	62.6	72.5	65.5	68.8	48.5	65.6	58.7	72.2	59.1	63.3	58.1	55.6	54.8	51.8
Calc Days Above State 24-Hr Std				305	275	250	233	251	244	226	251	257		261	248	240	228	201	210	198
Calc Days Above Nat 24-Hr Std				34	18	12	0	18	6	25	0	6	0	0	0	6	0	6	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														111.2	119.6	98.0	77.6	104.3	93.8	98.7
Max. 24-Hr. Concentration (Nat)														111.2	119.6	98.0	77.6	104.3	93.8	98.7
98th Percentile of 24-Hr Conc.														78.7	77.1	74.3	66.3	76.6	59.5	58.3
Annual Average (State)																		24.8		21.0
Avg. of Qtrly. Means (Nat)														31.0	28.3	31.0	27.4	24.8	22.1	21.0

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	8.4	8.7	8.7	8.5	8.1	8.0	6.9	6.6	6.3	6.2	6.2	5.9	5.3	4.7	4.7	4.4	4.7	3.9	3.3	3.2
Max. 1-Hr. Concentration	18.0	13.0	17.0	14.0	15.0	14.0	11.0	10.0	11.0	9.0	9.1	10.7	6.4	7.4	8.8	5.8	6.5	4.6	4.3	4.0
Max. 8-Hr. Concentration	8.3	7.6	10.0	10.3	7.3	7.4	6.1	7.1	7.3	6.3	5.3	5.6	4.8	4.4	4.2	4.5	3.8	3.7	3.0	2.5
Days Above State 8-Hr. Std.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.160	0.163	0.170	0.176	0.174	0.172	0.168	0.159	0.138	0.134	0.133	0.127	0.167	0.185	0.213	0.216	0.200	0.161	0.109	0.090
Max. 1-Hr. Concentration	0.160	0.210	0.190	0.160	0.160	0.210	0.230	0.140	0.181	0.147	0.110	0.200	0.255	0.307	0.214	0.237	0.149	0.099	0.092	0.077
Max. Annual Average	0.032	0.027		0.036	0.034	0.035	0.030		0.031	0.030	0.029	0.026	0.017	0.025	0.022	0.024	0.017	0.021	0.017	0.022

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.01	0.00	0.01	0.02	0.01

Table A-99

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

South Coast Air Basin

County: San Bernardino

OZONE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hour Indicator (State)	0.252	0.241	0.223	0.215	0.214	0.208	0.209	0.209	0.195	0.196	0.183	0.177	0.190	0.187	0.186	0.151	0.151	0.151	0.150	0.152
Avg. of 4th High 8-Hr. in 3 Yrs (Nat)	0.210	0.200	0.195	0.188	0.185	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127	0.127
Peak 1-Hour Indicator (State)	0.317	0.303	0.285	0.277	0.272	0.267	0.265	0.252	0.254	0.234	0.233	0.223	0.222	0.209	0.211	0.171	0.172	0.181	0.171	0.171
4th High 1-Hr. in 3 Yrs2	0.320	0.320	0.290	0.280	0.280	0.270	0.270	0.250	0.250	0.234	0.231	0.215	0.217	0.211	0.211	0.170	0.169	0.167	0.163	0.163
Max. 8-Hr. Concentration	0.240	0.198	0.250	0.252	0.193	0.203	0.211	0.185	0.192	0.203	0.173	0.143	0.206	0.142	0.149	0.144	0.139	0.153	0.145	0.145
Maximum 1-Hr. Concentration	0.310	0.290	0.350	0.320	0.330	0.290	0.280	0.270	0.265	0.256	0.239	0.205	0.244	0.174	0.184	0.184	0.161	0.176	0.163	0.182
Days Above State 8-Hr. Std.	192	182	190	201	177	170	192	192	173	148	147	145	124	130	123	135	132	132	138	119
Days Above Nat. 8-Hr. Std.	167	163	174	169	145	143	164	157	142	110	110	93	88	87	75	79	85	86	73	71
Days Above State 1-Hr. Std.	179	179	193	192	161	160	176	170	158	135	132	122	100	98	101	99	94	106	88	87

PM_{10} ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)			287	271	475	163	649	143	147	178	136	208	114	183	124	166	98	145	114	104
Max. 24-Hr. Concentration (Nat)			287	271	475	163	649	143	210	178	136	208	114	183	124	166	102	149	118	108
Max. Annual Average (State)				79.7	77.3	68.5	79.0	58.2	60.0	60.8	54.9	53.6	50.2	60.1	52.6	52.4	48.2	43.2	46.9	48.4
Max. Annual Average (Nat)			80.6	79.7	77.3	68.5	79.0	58.3	59.9	60.8	54.9	53.6	50.2	65.8	52.6	52.2	50.1	44.9	48.6	50.4
Calc Days Above State 24-Hr Std				293	265	250	243	231	232	209	211	174	171	223	195	208	194	129	158	166
Calc Days Above Nat 24-Hr Std				18	19	6	12	0	3	21	0	6	0	6	0	6	0	0	0	0

$PM_{2.5}$ ($\mu g/m^3$)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Max. 24-Hr. Concentration (State)														121.4	89.8	78.5	82.1	98.1	93.4	106.2
Max. 24-Hr. Concentration (Nat)														121.4	89.8	78.5	82.1	98.1	93.4	106.2
98th Percentile of 24-Hr Conc.														85.6	70.3	69.5	66.3	66.9	72.4	49.5
Annual Average (State)																25.0	25.8	23.8		
Avg. of Qtrly. Means (Nat)														25.7	25.9	26.5	25.8	23.8	21.9	18.9

CARBON MONOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 8-Hr. Indicator	7.2	7.1	7.5	7.8	7.7	7.4	6.7	6.1	5.5	6.4	6.3	6.1	5.1	4.9	4.9	4.1	3.5	3.6	3.5	3.2
Max. 1-Hr. Concentration	9.0	11.0	9.0	11.0	9.0	8.0	7.0	7.0	7.6	7.7	5.8	7.6	6.3	5.5	4.8	4.1	4.5	5.1	4.1	3.8
Max. 8-Hr. Concentration	6.7	6.7	7.6	8.1	6.6	7.0	5.9	6.0	6.4	6.3	4.5	5.9	4.7	4.1	4.1	3.3	3.2	4.5	3.2	2.5
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.172	0.183	0.193	0.195	0.192	0.187	0.174	0.167	0.160	0.178	0.180	0.178	0.143	0.139	0.137	0.131	0.123	0.125	0.118	0.117
Max. 1-Hr. Concentration	0.240	0.200	0.210	0.200	0.200	0.210	0.140	0.160	0.177	0.199	0.163	0.153	0.154	0.149	0.143	0.129	0.122	0.117	0.118	0.102
Max. Annual Average	0.042	0.047	0.047	0.045	0.041	0.043	0.040	0.042	0.041	0.046	0.038	0.036	0.036	0.039	0.038	0.037	0.036	0.034	0.031	0.031

SULFUR DIOXIDE (ppm)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hr. Indicator	0.05	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00

Table A-100

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX B

Air Quality Trend Data by Pollutant:

Ozone, PM_{10}, $PM_{2.5}$ CO, NO_2, NO_x, SO_2

Appendix B: *Air Quality Trend Data by Pollutant: Ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, NO_x, SO_2*

List of Tables

List of Tables (continued)

Introduction

This appendix contains air quality trend data for each of California's 15 air basins, organized by pollutant. The seven pollutants included are ozone, particulate matter (PM_{10} & $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), oxides of nitrogen (NO_x), and sulfur dioxide (SO_2). The statistics are the same as those presented in Chapter 4, and the time period covered is 1986 through 2005 for ozone, CO, NO_2, NO_x, and SO_2, 1988 through 2005 for PM_{10}. and 1999 to 2005 for $PM_{2.5}$.

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value statistics listed here reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour carbon monoxide concentrations in Imperial County in the Salton Sea Air Basin were below the levels of the State and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards were violated. The CO concentrations in the Salton Sea Air Basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing sites in the air basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at *www.arb.ca.gov/aqd/netrpt/netrpt.htm*.

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration.

In contrast to the peak and maximum statistics, the counts of days above a standard reflect composite, basinwide values (in other words, a count of the total number of days an exceedance occurred at any site in the air basin). The exception is PM_{10}, these data reflect the estimated number of exceedances at the one site with the highest total in the air basin.

This year, we have added a table of population-weighted exposure to concentrations above the State 1-hour ozone standard to this appendix. The next section provides additional information on the exposure indicator.

Population-Weighted Exposure Over the State Ozone Standard

In contrast to the peak indicator, which provides an indication of the potential for acute adverse health impacts, the population-weighted exposure provides an indication of the potential for chronic adverse health impacts. For the purposes of computing the exposures in this almanac, individuals are presumed to have been exposed to concentrations measured by the ambient (outdoor) air quality monitoring network. However, daily activity patterns (for example, being inside a building or exercising outdoors) may diminish or increase exposures to some outdoor concentrations that exceed the State standard. While many indicators characterize air quality at an individual monitoring location, the exposure indicator provides an integrated regional perspective. For each day, the calculations simultaneously consider daily ozone data from all of the monitors in a region. People living in areas where the daily maximum 8-hour ozone concentration exceeds the standard are then included in the population-weighted exposure for that day. These daily population-weighted exposures are then aggregated into an annual population-weighted exposure for each year and each basin.

The following example shows a simple 8-hour ozone exposure calculation. A daily maximum 8-hour ozone concentration of 0.090 ppm represents an exposure of 0.160 ppm-hours above the State ozone standard of 0.070 ppm:

$$(0.090 \text{ ppm} - 0.070 \text{ ppm}) \times 8 \text{ hours} = 0.160 \text{ ppm-hours}$$

Additionally, when the daily maximum 8-hour ozone concentration is equal to or below the level of the State 8-hour standard of 0.070 ppm, the exposure is zero. The population associated with these “zero” exposures are not included in the exposure calculations in this almanac because including population with the zero exposures dilutes the real impact of the ozone concentrations that are above the State standard and are, therefore, adversely affecting public health.

The 1-hour ozone exposures are calculated in a similar way using the hourly ozone data instead of using the daily maximum 8-hour ozone data. For example, a measured hourly ozone concentration of 0.110 ppm for one hour represents an exposure of 0.020 ppm-hours above the State ozone standard of 0.090 ppm:

$$(0.110 \text{ ppm} - 0.090 \text{ ppm}) \times 1 \text{ hour} = 0.020 \text{ ppm-hours}$$

In contrast to this example, when the hourly ozone concentration is equal to or below the level of the State 1-hour standard of 0.090 ppm, the exposure is zero. Similarly, the population associated with these “zero” exposures are not included in the exposure calculations.

The calculations for the exposure indicators are based on all concentrations measured in the area that satisfies the specified data requirements. The population is based on census tract data, and the calculation is performed at the census tract level and then aggregated to the regional level. Exposures for the years 1985 through 1999 use census information for 1990, while exposures for the years 2000 through 2005 use census information for the year of 2000. General details about these computational procedures can be found in the ARB publication entitled: *“Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards” (September 1993).*

Page B-26 of the appendix provides estimates of 1-hour ozone exposures. Estimates of 8-hour ozone exposures are provided in Chapter 3.

Ozone

Peak 1-Hour Indicator (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.100	0.100	0.100	0.100	0.099	0.097	0.115	0.110	0.108	0.097	0.100	0.097	0.097	0.089	0.089	0.106	0.106	0.091	0.090	0.092
LAKE COUNTY	0.082	0.081	0.080	0.083	0.074	0.075	0.077	0.077	0.083	0.082	0.082	0.073	0.075	0.087	0.083	0.080	0.081	0.080	0.081	0.076
LAKE TAHOE	0.081	0.085	0.089	0.092	0.092	0.093	0.088	0.079	0.079	0.083	0.083	0.083	0.082	0.081	0.088	0.090	0.093	0.092	0.089	0.084
MOJAVE DESERT	0.232	0.230	0.233	0.204	0.214	0.223	0.219	0.193	0.191	0.194	0.186	0.172	0.176	0.162	0.154	0.136	0.140	0.137	0.139	0.138
MOUNTAIN COUNTIES	0.091	0.119	0.155	0.134	0.134	0.118	0.128	0.122	0.127	0.128	0.137	0.140	0.147	0.143	0.143	0.136	0.142	0.146	0.143	0.130
NORTH CENTRAL COAST	0.109	0.145	0.137	0.132	0.115	0.112	0.113	0.112	0.107	0.106	0.111	0.111	0.112	0.102	0.106	0.101	0.103	0.103	0.102	0.097
NORTH COAST	0.074	0.084	0.059	0.057	0.066	0.066	0.085	0.088	0.088	0.088	0.086	0.091	0.104	0.110	0.106	0.093	0.083	0.082	0.082	0.077
NORTHEAST PLATEAU	0.079	0.081	0.081	0.083	0.082	0.084	0.080	0.073	0.075	0.074	0.075	0.073	0.074	0.077	0.079	0.081	0.085	0.082	0.082	0.078
SACRAMENTO VALLEY	0.170	0.164	0.168	0.163	0.162	0.153	0.158	0.159	0.151	0.148	0.152	0.138	0.159	0.154	0.152	0.139	0.135	0.137	0.133	0.131
SALTON SEA	0.196	0.184	0.182	0.180	0.181	0.175	0.168	0.159	0.162	0.164	0.157	0.155	0.153	0.149	0.149	0.153	0.142	0.136	0.132	0.131
SAN DIEGO	0.179	0.179	0.179	0.187	0.181	0.171	0.162	0.152	0.151	0.148	0.142	0.132	0.133	0.133	0.131	0.118	0.117	0.116	0.111	0.109
SAN FRANCISCO BAY AREA	0.155	0.150	0.147	0.149	0.136	0.130	0.130	0.126	0.121	0.135	0.151	0.149	0.151	0.143	0.143	0.121	0.125	0.129	0.127	0.122
SAN JOAQUIN VALLEY	0.170	0.172	0.171	0.171	0.164	0.166	0.162	0.163	0.159	0.164	0.163	0.166	0.162	0.160	0.159	0.146	0.151	0.152	0.151	0.144
SOUTH CENTRAL COAST	0.178	0.173	0.178	0.173	0.174	0.165	0.159	0.159	0.150	0.162	0.161	0.154	0.144	0.135	0.131	0.125	0.125	0.124	0.118	0.116
SOUTH COAST	0.358	0.341	0.316	0.317	0.310	0.304	0.286	0.284	0.279	0.249	0.233	0.229	0.222	0.209	0.211	0.171	0.172	0.182	0.180	0.174

Table B-1

Peak 8-Hour Indicator (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.100	0.098	0.096	0.094	0.096	0.091	0.100	0.097	0.096	0.090	0.089	0.085	0.089	0.089	0.087	0.095	0.095	0.088	0.085	0.089
LAKE COUNTY	0.075	0.077	0.078	0.074	0.062	0.066	0.066	0.068	0.074	0.074	0.074	0.064	0.066	0.078	0.076	0.074	0.075	0.073	0.073	0.067
LAKE TAHOE	0.077	0.080	0.083	0.084	0.085	0.086	0.083	0.072	0.076	0.078	0.079	0.077	0.077	0.077	0.080	0.081	0.083	0.084	0.082	0.079
MOJAVE DESERT	0.209	0.201	0.198	0.169	0.178	0.177	0.172	0.162	0.154	0.157	0.153	0.152	0.151	0.138	0.130	0.118	0.120	0.121	0.122	0.120
MOUNTAIN COUNTIES	0.085	0.106	0.128	0.125	0.119	0.112	0.114	0.114	0.113	0.117	0.122	0.119	0.125	0.124	0.126	0.119	0.124	0.127	0.126	0.116
NORTH CENTRAL COAST	0.091	0.120	0.114	0.110	0.095	0.095	0.097	0.095	0.091	0.091	0.097	0.097	0.099	0.093	0.094	0.089	0.092	0.092	0.091	0.084
NORTH COAST	0.063	0.073	0.055	0.051	0.064	0.064	0.070	0.074	0.072	0.075	0.074	0.082	0.091	0.096	0.093	0.081	0.071	0.070	0.069	0.065
NORTHEAST PLATEAU	0.074	0.077	0.076	0.076	0.076	0.077	0.073	0.069	0.069	0.065	0.066	0.068	0.071	0.071	0.072	0.070	0.074	0.075	0.075	0.074
SACRAMENTO VALLEY	0.139	0.132	0.134	0.133	0.132	0.128	0.129	0.130	0.121	0.123	0.126	0.120	0.130	0.128	0.122	0.118	0.119	0.116	0.117	0.116
SALTON SEA	0.160	0.155	0.146	0.148	0.146	0.146	0.140	0.136	0.132	0.130	0.128	0.126	0.128	0.118	0.116	0.114	0.123	0.124	0.121	0.120
SAN DIEGO	0.148	0.144	0.138	0.142	0.146	0.141	0.135	0.128	0.124	0.126	0.122	0.117	0.119	0.117	0.116	0.104	0.106	0.104	0.101	0.094
SAN FRANCISCO BAY AREA	0.127	0.120	0.116	0.116	0.108	0.102	0.100	0.098	0.095	0.107	0.116	0.114	0.114	0.111	0.114	0.097	0.100	0.101	0.100	0.094
SAN JOAQUIN VALLEY	0.134	0.144	0.144	0.137	0.132	0.134	0.129	0.131	0.127	0.134	0.136	0.139	0.134	0.132	0.139	0.123	0.124	0.127	0.127	0.124
SOUTH CENTRAL COAST	0.155	0.153	0.152	0.150	0.152	0.148	0.138	0.137	0.126	0.138	0.140	0.138	0.129	0.119	0.116	0.111	0.110	0.107	0.104	0.102
SOUTH COAST	0.261	0.257	0.241	0.224	0.225	0.222	0.211	0.212	0.202	0.196	0.183	0.177	0.190	0.187	0.186	0.151	0.151	0.153	0.150	0.152

Table B-2

Ozone

4th Highest 1-Hour Concentration in 3 Years (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.100	0.100	0.100	0.100	0.100	0.090	0.140	0.140	0.130	0.100	0.100	0.092	0.091	0.089	0.090	0.100	0.100	0.092	0.088	0.090
LAKE COUNTY	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070
LAKE TAHOE	0.080	0.090	0.090	0.090	0.090	0.090	0.090	0.080	0.083	0.086	0.083	0.083	0.081	0.081	0.089	0.089	0.089	0.088	0.088	0.084
MOJAVE DESERT	0.240	0.230	0.230	0.210	0.220	0.230	0.230	0.200	0.190	0.210	0.182	0.175	0.167	0.166	0.164	0.135	0.143	0.138	0.138	0.138
MOUNTAIN COUNTIES	0.090	0.145	0.160	0.160	0.160	0.150	0.150	0.120	0.124	0.124	0.136	0.145	0.145	0.145	0.144	0.144	0.148	0.148	0.145	0.139
NORTH CENTRAL COAST	0.100	0.146	0.140	0.140	0.120	0.110	0.110	0.110	0.110	0.104	0.114	0.114	0.114	0.109	0.107	0.100	0.104	0.106	0.104	0.095
NORTH COAST	0.070	0.090	0.060	0.059	0.070	0.060	0.080	0.090	0.090	0.090	0.090	0.090	0.110	0.110	0.110	0.100	0.083	0.083	0.083	0.080
NORTHEAST PLATEAU	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070	0.070	0.070	0.070	0.070	0.078	0.077	0.081	0.082	0.082	0.087	0.081	0.077
SACRAMENTO VALLEY	0.180	0.160	0.160	0.160	0.160	0.150	0.160	0.150	0.142	0.145	0.145	0.143	0.149	0.149	0.149	0.138	0.134	0.138	0.138	0.131
SALTON SEA	0.190	0.180	0.180	0.180	0.180	0.180	0.170	0.170	0.152	0.205	0.192	0.180	0.155	0.150	0.157	0.166	0.147	0.142	0.131	0.130
SAN DIEGO	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.137	0.133	0.131	0.130	0.118	0.118	0.118	0.115	0.112
SAN FRANCISCO BAY AREA	0.150	0.150	0.140	0.140	0.130	0.130	0.130	0.120	0.121	0.138	0.138	0.138	0.138	0.139	0.139	0.126	0.124	0.123	0.123	0.113
SAN JOAQUIN VALLEY	0.180	0.170	0.170	0.180	0.170	0.160	0.160	0.160	0.160	0.164	0.165	0.164	0.161	0.161	0.161	0.146	0.151	0.151	0.151	0.149
SOUTH CENTRAL COAST	0.180	0.180	0.180	0.179	0.171	0.170	0.150	0.150	0.146	0.157	0.158	0.152	0.144	0.134	0.132	0.128	0.124	0.124	0.118	0.118
SOUTH COAST	0.360	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.231	0.215	0.217	0.211	0.211	0.184	0.169	0.184	0.171	0.173

Table B-3

Average of 4th Highest 8-Hour Concentration in 3 Years (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.082	0.084	0.086	0.081	0.081	0.076	0.081	0.078	0.082	0.079	0.079	0.077	0.079	0.079	0.080	0.079	0.081	0.081	0.080	0.081
LAKE COUNTY	0.064	0.065	0.065	0.058	0.054	0.055	0.055	0.057	0.059	0.061	0.060	0.058	0.057	0.061	0.062	0.064	0.064	0.064	0.065	0.061
LAKE TAHOE	0.069	0.071	0.074	0.076	0.075	0.076	0.075		0.061	0.070	0.071	0.068	0.069	0.069	0.069	0.067	0.075	0.076	0.075	0.072
MOJAVE DESERT	0.134	0.163	0.165	0.153	0.151	0.151	0.147	0.139	0.138	0.133	0.131	0.124	0.127	0.118	0.110	0.102	0.106	0.106	0.107	0.105
MOUNTAIN COUNTIES				0.090	0.090	0.092	0.089	0.096	0.097	0.099	0.103	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.102	0.098
NORTH CENTRAL COAST	0.078	0.082	0.079	0.090	0.084	0.083	0.084	0.083	0.081	0.081	0.085	0.084	0.086	0.082	0.082	0.079	0.081	0.081	0.081	0.076
NORTH COAST	0.052	0.056		0.042	0.046	0.044	0.051	0.050	0.066	0.069	0.069	0.072	0.077	0.082	0.076	0.069	0.063	0.062	0.061	0.057
NORTHEAST PLATEAU	0.064	0.069	0.069	0.069	0.067	0.059	0.057	0.051	0.058	0.057	0.059	0.058	0.061	0.062	0.063	0.053	0.055	0.057	0.065	0.064
SACRAMENTO VALLEY	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.097	0.095	0.101	0.105	0.101	0.101	0.100	0.097	0.097
SALTON SEA	0.135	0.131	0.130	0.129	0.126	0.125	0.121	0.118	0.113	0.110	0.111	0.107	0.107	0.100	0.099	0.100	0.105	0.108	0.104	0.104
SAN DIEGO	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089	0.086
SAN FRANCISCO BAY AREA	0.097	0.092	0.092	0.097	0.088	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.082	0.082	0.086	0.084	0.078
SAN JOAQUIN VALLEY	0.117	0.118	0.121	0.116	0.112	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.113	0.111	0.109	0.115	0.115	0.116	0.113
SOUTH CENTRAL COAST	0.116	0.129	0.131	0.132	0.130	0.127	0.118	0.115	0.112	0.117	0.119	0.115	0.112	0.106	0.105	0.101	0.097	0.095	0.094	0.091
SOUTH COAST	0.222	0.217	0.205	0.192	0.186	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127	0.127

Table B-4

Ozone

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.100	0.100	0.100	0.080	0.100	0.090	0.150	0.090	0.120	0.110	0.095	0.092	0.092	0.094	0.090	0.099	0.100	0.089	0.086	0.105
LAKE COUNTY	0.080	0.090	0.070	0.060	0.090	0.080	0.080	0.080	0.090	0.070	0.090	0.080	0.080	0.090	0.080	0.070	0.090	0.080	0.080	0.070
LAKE TAHOE	0.090	0.090	0.090	0.100	0.090	0.090	0.100	0.090	0.086	0.092	0.083	0.095	0.081	0.095	0.089	0.095	0.102	0.086	0.096	0.079
MOJAVE DESERT	0.260	0.220	0.270	0.220	0.270	0.240	0.230	0.200	0.188	0.240	0.175	0.187	0.202	0.137	0.163	0.146	0.157	0.163	0.138	0.145
MOUNTAIN COUNTIES	0.090	0.145	0.160	0.130	0.150	0.110	0.130	0.120	0.130	0.146	0.138	0.145	0.163	0.165	0.134	0.148	0.156	0.145	0.137	0.128
NORTH CENTRAL COAST	0.100	0.146	0.127	0.140	0.120	0.140	0.110	0.110	0.101	0.138	0.120	0.112	0.124	0.107	0.098	0.108	0.115	0.111	0.093	0.107
NORTH COAST	0.070	0.090	0.090	0.050	0.070	0.060	0.090	0.090	0.100	0.100	0.080	0.100	0.130	0.100	0.090	0.090	0.092	0.090	0.090	0.088
NORTHEAST PLATEAU	0.080	0.090	0.080	0.080	0.080	0.050	0.080	0.070	0.080	0.070	0.070	0.082	0.078	0.070	0.082	0.049	0.087	0.089	0.077	0.070
SACRAMENTO VALLEY	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.131	0.134
SALTON SEA	0.180	0.170	0.200	0.190	0.170	0.180	0.170	0.210	0.180	0.232	0.180	0.160	0.236	0.171	0.169	0.167	0.156	0.144	0.125	0.139
SAN DIEGO	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129	0.113
SAN FRANCISCO BAY AREA	0.140	0.170	0.150	0.140	0.130	0.140	0.130	0.130	0.130	0.155	0.138	0.114	0.147	0.156	0.152	0.134	0.160	0.128	0.113	0.120
SAN JOAQUIN VALLEY	0.180	0.200	0.190	0.180	0.170	0.180	0.160	0.160	0.175	0.173	0.165	0.147	0.169	0.155	0.165	0.149	0.164	0.156	0.155	0.134
SOUTH CENTRAL COAST	0.180	0.185	0.180	0.230	0.170	0.170	0.150	0.146	0.164	0.169	0.158	0.137	0.174	0.135	0.128	0.129	0.132	0.130	0.122	0.121
SOUTH COAST	0.350	0.330	0.350	0.340	0.330	0.320	0.300	0.280	0.300	0.256	0.239	0.205	0.244	0.174	0.184	0.190	0.169	0.194	0.163	0.182

Table B-5

Maximum 8-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0.093	0.091	0.098	0.077	0.091	0.073	0.103	0.077	0.092	0.101	0.090	0.080	0.085	0.089	0.080	0.095	0.088	0.084	0.081	0.101
LAKE COUNTY	0.080	0.080	0.061	0.053	0.063	0.066	0.057	0.072	0.075	0.063	0.070	0.065	0.076	0.072	0.073	0.065	0.077	0.065	0.066	0.066
LAKE TAHOE	0.080	0.082	0.085	0.085	0.080	0.081	0.082	0.071	0.079	0.089	0.073	0.071	0.077	0.079	0.077	0.084	0.079	0.079	0.082	0.070
MOJAVE DESERT	0.225	0.161	0.167	0.161	0.198	0.173	0.165	0.147	0.155	0.170	0.146	0.133	0.144	0.122	0.132	0.117	0.123	0.130	0.119	0.123
MOUNTAIN COUNTIES	0.078	0.111	0.138	0.110	0.115	0.102	0.112	0.111	0.108	0.113	0.113	0.112	0.127	0.118	0.113	0.109	0.137	0.122	0.124	0.120
NORTH CENTRAL COAST	0.083	0.113	0.096	0.100	0.095	0.108	0.090	0.087	0.092	0.102	0.101	0.091	0.097	0.085	0.084	0.088	0.094	0.088	0.083	0.085
NORTH COAST	0.062	0.076	0.076	0.042	0.060	0.051	0.072	0.073	0.080	0.090	0.071	0.091	0.106	0.087	0.077	0.073	0.072	0.080	0.077	0.060
NORTHEAST PLATEAU	0.070	0.081	0.071	0.076	0.076	0.046	0.073	0.070	0.068	0.062	0.063	0.074	0.071	0.067	0.071	0.038	0.075	0.074	0.071	0.064
SACRAMENTO VALLEY	0.125	0.127	0.130	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.101	0.117
SALTON SEA	0.142	0.141	0.137	0.160	0.130	0.148	0.128	0.128	0.130	0.132	0.125	0.120	0.136	0.110	0.113	0.113	0.124	0.110	0.106	0.116
SAN DIEGO	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095	0.089
SAN FRANCISCO BAY AREA	0.106	0.116	0.101	0.102	0.105	0.108	0.101	0.112	0.097	0.115	0.112	0.084	0.111	0.122	0.114	0.102	0.106	0.101	0.084	0.090
SAN JOAQUIN VALLEY	0.135	0.150	0.127	0.136	0.123	0.130	0.121	0.125	0.129	0.134	0.137	0.127	0.136	0.123	0.131	0.120	0.132	0.127	0.126	0.113
SOUTH CENTRAL COAST	0.145	0.153	0.142	0.176	0.143	0.140	0.125	0.129	0.132	0.144	0.127	0.114	0.151	0.112	0.108	0.113	0.109	0.114	0.102	0.100
SOUTH COAST	0.251	0.210	0.258	0.252	0.193	0.203	0.218	0.195	0.208	0.203	0.173	0.148	0.206	0.142	0.149	0.144	0.144	0.153	0.145	0.145

Table B-6

Ozone

Days Above National 8-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	13	2	6	0	3	0	9	0	6	2	1	0	1	1	0	4	2	0	0	4
LAKE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKE TAHOE	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
MOJAVE DESERT	146	144	142	137	120	122	134	124	129	109	91	78	68	73	72	65	66	74	49	55
MOUNTAIN COUNTIES	0	22	43	38	22	33	47	34	49	47	59	28	54	65	56	44	59	56	32	38
NORTH CENTRAL COAST	0	26	6	3	5	3	4	4	1	3	9	1	6	1	0	2	5	2	0	1
NORTH COAST	0	0	0	0	0	0	0	0	0	1	0	1	5	2	0	0	0	0	0	0
NORTHEAST PLATEAU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY	50	73	68	37	44	60	56	22	48	40	44	15	60	43	35	37	34	40	20	25
SALTON SEA	62	72	70	90	56	65	75	80	75	79	62	63	40	35	33	54	55	47	37	43
SAN DIEGO	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8	5
SAN FRANCISCO BAY AREA	13	29	20	13	7	6	6	5	4	18	14	0	16	9	4	7	7	7	0	1
SAN JOAQUIN VALLEY	134	148	140	133	104	121	119	103	108	109	114	95	84	117	103	109	125	134	109	72
SOUTH CENTRAL COAST	122	91	113	97	76	94	63	53	65	70	68	46	41	24	30	25	16	35	18	12
SOUTH COAST	191	179	194	181	161	160	173	161	148	120	115	118	93	93	94	92	96	109	88	83

Table B-7

Ozone

Days Above State 1-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	5	4	3	0	2	0	5	0	4	2	1	0	0	0	0	4	2	0	0	1
LAKE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKE TAHOE	0	0	0	2	0	0	1	0	0	0	0	1	0	1	0	1	1	0	1	0
MOJAVE DESERT	156	158	152	158	136	135	150	135	137	119	108	101	77	83	86	72	75	93	75	66
MOUNTAIN COUNTIES	0	27	51	39	22	23	54	35	57	49	65	29	52	66	51	50	62	56	33	41
NORTH CENTRAL COAST	1	37	14	10	11	12	9	12	6	8	16	1	10	3	3	3	8	3	0	2
NORTH COAST	0	0	0	0	0	0	0	0	1	1	0	2	7	4	0	0	0	0	0	0
NORTHEAST PLATEAU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY	66	94	98	68	50	68	74	34	60	50	58	25	62	59	41	44	46	51	29	33
SALTON SEA	80	85	107	119	83	86	100	113	126	124	98	91	72	88	54	81	68	66	48	54
SAN DIEGO	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12	16
SAN FRANCISCO BAY AREA	39	46	41	22	14	23	23	19	13	28	34	8	29	20	12	15	16	19	7	9
SAN JOAQUIN VALLEY	147	156	156	148	131	133	127	125	118	124	120	110	90	123	114	123	127	137	106	83
SOUTH CENTRAL COAST	150	126	138	117	105	112	75	63	90	95	82	59	54	33	38	34	24	45	23	17
SOUTH COAST	217	196	216	211	185	184	190	185	165	153	141	144	107	111	115	121	116	125	105	99

Table B-8

Days Above State 8-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	50	40	36	6	20	3	33	16	54	8	30	25	31	32	27	37	34	31	28	47
LAKE COUNTY	4	3	0	0	0	0	0	1	2	0	0	0	1	3	1	0	5	0	0	0
LAKE TAHOE	3	17	20	20	8	10	20	2	6	5	2	1	7	3	16	25	24	8	13	2
MOJAVE DESERT	180	178	177	178	179	163	174	162	175	151	159	154	128	156	140	144	132	141	132	128
MOUNTAIN COUNTIES	7	74	109	85	83	92	114	93	122	108	124	107	104	133	115	112	135	134	103	85
NORTH CENTRAL COAST	11	84	48	28	32	33	30	29	26	32	50	17	33	24	22	20	36	28	13	7
NORTH COAST	0	2	3	0	0	0	2	3	3	4	2	9	11	9	1	1	2	1	1	0
NORTHEAST PLATEAU	0	4	1	2	3	0	1	0	0	0	0	1	1	0	1	0	1	3	1	0
SACRAMENTO VALLEY	88	136	125	99	104	111	107	61	113	86	103	60	97	111	81	84	95	92	87	62
SALTON SEA	105	116	124	145	107	114	125	145	173	151	120	158	111	138	100	111	117	101	108	102
SAN DIEGO	159	160	189	189	167	144	133	127	122	127	89	73	88	74	75	64	56	59	43	51
SAN FRANCISCO BAY AREA	34	57	44	34	17	26	30	23	20	30	37	10	29	28	17	21	19	20	13	9
SAN JOAQUIN VALLEY	186	189	200	182	179	167	169	174	166	163	164	169	127	175	158	192	181	172	167	124
SOUTH CENTRAL COAST	184	165	181	164	150	170	138	105	138	138	131	123	104	100	87	83	73	102	79	67
SOUTH COAST	221	198	215	221	192	188	199	205	176	173	165	175	139	146	147	154	147	153	152	138

Table B-9

PM_{10}

Maximum 24-Hour Concentration (State) (ug/m³)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS			166	227	866	150	493	981	388	692	309	402	1022	2708	9967	3643	7401	15641	4797	1720
LAKE COUNTY				29	30	31	22	30	21	30	26	18	34	40	21	23	85	32	22	20
LAKE TAHOE							52	92	78	71	72	55	50	36	44	50	46	52	41	33
MOJAVE DESERT			63	191	462	780	80	79	140	143	138	130	159	109	90	112	194	169	83	70
MOUNTAIN COUNTIES			113	144	209	350	120	130	115	118	114	138	92	115	89	277	72	58	124	73
NORTH CENTRAL COAST			65	58	56	55	41	102	106	152	115	113	78	106	77	74	81	90	83	69
NORTH COAST			101	92	266	78	58	54	77	68	87	66	52	95	53	72	72	71	64	71
NORTHEAST PLATEAU				59	63	60	74	60	101	78	188	97	63	93	74	91	73	31	29	28
SACRAMENTO VALLEY			100	147	153	136	111	113	154	145	98	126	130	179	90	112	96	123	171	109
SALTON SEA			368	712	520	340	175	175	258	229	359	532	181	238	279	634	361	848	195	220
SAN DIEGO			80	90	115	81	67	159	129	121	93	125	89	119	136	106	131	289	138	154
SAN FRANCISCO BAY AREA			146	147	165	155	112	93	97	74	76	85	100	117	80	114	84	60	65	81
SAN JOAQUIN VALLEY			206	237	439	279	186	239	192	279	153	199	167	186	153	221	194	150	219	137
SOUTH CENTRAL COAST			132	119	133	96	135	141	139	129	93	321	111	86	102	77	100	169	146	87
SOUTH COAST			287	271	475	179	649	231	161	219	162	208	116	183	139	219	126	159	133	131

Table B-10 ** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Maximum 24-Hour Concentration (National) (ug/m³)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS			394	1861	866	181	526	981	1381	3929	2383	2229	1464	2901	10466	4482	7915	16619	5225	3988
LAKE COUNTY				29	30	31	22	30	21	30	26	18	35	43	22	21				
LAKE TAHOE							52	92	78	71	72	55	59	41	50	58	51	87	81	38
MOJAVE DESERT			63	191	462	780	80	79	140	235	138	130	165	166	163	172	522	361	199	131
MOUNTAIN COUNTIES			113	144	209	350	120	130	115	118	114	179	114	125	98	312	76	66	133	127
NORTH CENTRAL COAST			65	58	57	58	45	102	106	152	115	113	76	103	74	72	77	87	80	66
NORTH COAST			101	92	266	78	58	54	77	68	87	66	50	100	51	73	74	68	61	67
NORTHEAST PLATEAU				59	63	60	74	60	101	78	188	97	66	100	80	105	86	33	32	29
SACRAMENTO VALLEY			100	147	153	136	111	113	204	287	98	126	130	275	109	123	145	89	169	110
SALTON SEA			368	712	520	340	175	175	258	278	359	532	185	227	268	647	373	840	201	211
SAN DIEGO			80	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137	155
SAN FRANCISCO BAY AREA			146	150	165	155	112	101	97	75	77	95	92	119	76	109	80	58	63	78
SAN JOAQUIN VALLEY			206	237	439	279	186	239	192	279	153	228	160	183	145	212	189	150	217	131
SOUTH CENTRAL COAST			132	119	133	96	135	141	139	129	98	321	110	99	111	115	178	168	146	83
SOUTH COAST			287	271	475	179	649	231	210	219	185	208	116	183	139	219	130	164	137	131

Table B-11 ** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

PM_{10}

Maximum Annual Average (State) (ug/m^3)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS				27.1	29.4	23.2	37.0	34.2	29.8	32.3	21.5	26.4	57.8	13.6	116.8	63.1	159.3	130.4	68.3	30.1
LAKE COUNTY				12.9			11.9	11.3	11.0	10.8	10.2	8.6			10.6	10.2	13.1	10.0	10.0	9.7
LAKE TAHOE									27.1	22.5		21.6	19.8	16.9	17.3	16.9	17.1	15.0		14.8
MOJAVE DESERT				42.5			39.7	35.1	27.9		29.0	27.4	15.6	32.2	33.6	29.7	34.0	27.9	18.3	26.1
MOUNTAIN COUNTIES						48.4		18.4	33.9	24.2	21.5	28.3	25.3	25.3	19.9	29.6	25.9	21.0	17.3	18.0
NORTH CENTRAL COAST				24.3	23.8	24.3		21.7	31.1	36.3	32.8	36.9		32.3	31.2		28.9	31.6	28.2	24.3
NORTH COAST				31.4	28.0	25.4	21.9	23.2	24.3	26.0	24.4	23.4	22.1	24.3	23.5	25.4	22.9	22.2	20.6	18.6
NORTHEAST PLATEAU				24.8			23.6		22.1	16.0				16.8			17.5	12.8	12.8	13.3
SACRAMENTO VALLEY				41.9	38.5	39.2	35.2	31.2	33.3	29.9	29.9	28.8	29.9	39.4	27.9	30.5	31.8	28.8	35.2	30.4
SALTON SEA				77.9	80.3	69.1	47.5	52.6	48.3	72.0	73.6	77.7	66.6	79.0	84.8	87.1	80.9	79.7	60.3	52.7
SAN DIEGO				44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	42.5	50.9	44.5	47.4	52.4	52.6	51.7	28.6
SAN FRANCISCO BAY AREA				37.7	35.1	37.9	33.9	28.8	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7	26.4	24.8	26.0	24.2
SAN JOAQUIN VALLEY			52.7	67.0	80.1	70.0	62.4	56.3	49.6	57.9	54.1	47.3	40.5	60.1	53.9	52.3	59.9	52.3	43.6	44.5
SOUTH CENTRAL COAST			40.3	41.6	36.9	40.0	33.0	29.3	31.6	30.9	29.3	36.5	26.1	29.5	31.2	28.8	28.6	30.0	31.4	25.6
SOUTH COAST				94.0	78.2	76.0	79.0	72.5	65.5	68.8	61.5	65.3	50.2	72.2	60.1	62.9	56.2	55.1	53.5	50.4

Table B-12

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Maximum Annual Average of Quarters (National) (ug/m^3)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS			36.1	91.0	48.3	28.6	37.3	59.4	43.6	69.9	54.2	36.8	53.8	55.2	121.2	230.8	147.5	147.3	105.7	83.5
LAKE COUNTY				12.9	11.4	12.6	11.8	11.3	10.9	10.7	10.2	8.6	7.8	12.5	10.8	7.6				
LAKE TAHOE							5.9	26.0	27.1	22.5	23.4	21.6	23.4	19.9	20.4	19.8	19.9	17.8	22.6	17.5
MOJAVE DESERT			34.7	42.5	49.5	58.0	39.4	35.2	42.1	25.5	29.0	29.4	27.8	32.1	33.6	29.8	34.3	33.2	28.7	28.9
MOUNTAIN COUNTIES			28.1	77.9	40.9	47.8	37.5	35.4	34.6	28.0	32.2	38.3	32.5	27.9	26.3	33.3	28.5	23.1	32.3	29.9
NORTH CENTRAL COAST			26.3	25.5	29.9	24.3	19.7	35.6	31.1	36.4	32.8	37.0	28.5	30.9	29.9	29.4	27.7	30.1	27.3	23.6
NORTH COAST		19.8	27.1	31.4	28.0	25.3	21.8	22.6	24.3	26.1	24.6	23.4	24.7	25.3	22.4	24.1	22.2	21.4	20.7	18.0
NORTHEAST PLATEAU				24.8	23.5	21.4	23.6	21.4	29.6	30.3	16.2	20.2	14.7	32.9	27.9	25.1	18.6	13.3	13.6	13.9
SACRAMENTO VALLEY		38.2	51.2	46.0	51.9	46.4	42.3	36.9	34.5	40.7	32.6	28.6	29.0	38.4	27.9	30.2	30.9	28.4	34.5	27.2
SALTON SEA			61.8	89.9	80.3	69.3	47.5	53.3	75.1	71.9	73.6	77.7	74.1	77.8	95.2	86.2	79.9	80.0	60.8	53.2
SAN DIEGO			40.0	43.8	37.6	36.4	35.9	45.9	50.7	46.8	38.5	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2	49.8
SAN FRANCISCO BAY AREA			33.8	40.8	35.2	38.3	33.7	28.8	28.6	28.4	24.9	25.8	25.1	28.7	26.8	28.9	30.6	24.2	25.3	23.5
SAN JOAQUIN VALLEY			74.3	79.3	79.3	76.3	62.9	56.9	50.1	58.2	52.0	48.2	52.5	59.5	53.1	57.4	59.2	52.4	47.9	44.3
SOUTH CENTRAL COAST			40.1	41.5	36.6	40.1	43.1	42.8	31.6	39.9	31.7	37.0	25.2	31.3	33.8	31.5	43.2	30.7	31.5	27.7
SOUTH COAST			103.7	93.0	78.2	76.1	79.0	72.5	65.5	68.8	62.8	65.6	58.7	72.2	59.1	63.3	58.1	55.6	54.8	51.8

Table B-13

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

PM_{10}

Calculated Days Above State 24-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS				36	18	12	83	62	64	37	7	36	80	0	58	41	93	44	35	36
LAKE COUNTY				0			0	0	0	0	0	0			0	0	12	0	0	0
LAKE TAHOE									42	18		13	0	0	0	0	0	6		0
MOJAVE DESERT				72			84	58	6		18	6	0	31	37	18	55	18	0	19
MOUNTAIN COUNTIES						95		6	87	12	6	41	19	24	25	37	18	6	0	6
NORTH CENTRAL COAST				6	6	0		12	31	71	71	72		50	24		25	41	43	12
NORTH COAST				40	29	23	6	13	13	13	12	6	6	36	7	24	12	25	0	0
NORTHEAST PLATEAU				29			24		0	0				0			6	0	0	0
SACRAMENTO VALLEY				82	74	104	70	63	36	57	44	22	60	64	43	50	41	31	80	42
SALTON SEA				221	254	230	143	151	136	218	244	294	227	289	313	312	305	284	220	160
SAN DIEGO				114	38	84	12	134	134	122	12	125	107	124	109	129	173	151	175	13
SAN FRANCISCO BAY AREA				76	70	91	53	37	36	24	12	18	18	37	42	48	24	18	25	23
SAN JOAQUIN VALLEY			159	208	292	225	246	183	166	184	204	107	102	182	196	168	256	167	113	146
SOUTH CENTRAL COAST			102	139	66	99	57	53	24	57	29	47	18	13	39	18	19	31	61	12
SOUTH COAST				305	275	250	243	251	244	226	251	257	171	261	248	240	228	201	210	198

Table B-14 ** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Calculated Days Above National 24-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS			12	22	18	6	27	30	20	27	22	20	22	32	43	39	49	43	45	38
LAKE COUNTY				0	0	0	0	0	0	0	0	0	0		0					
LAKE TAHOE									0	0	0	0	0	0	0	0	0	0	0	0
MOJAVE DESERT				8	24	30	0	0	0	1	0	0	1	1	1	1	6	3	2	0
MOUNTAIN COUNTIES					9	19	0	0	0	0	0	2	0	0	0	1	0	0	0	0
NORTH CENTRAL COAST				0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST			0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU				0	0		0		0	0	3	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY				0	0	0	0	0	1	3	0	0	0	5	0	0	0	0	1	0
SALTON SEA				37	21	18	6	18	4	9	27	35	16	29	36	29	18	28	8	9
SAN DIEGO				0	0	0	0	6	0	0	0	0	0	0	0	0	0	9	0	6
SAN FRANCISCO BAY AREA				0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY			46	29	54	40	9	3	2	4	0	2	5	4	0	4	3	0	1	0
SOUTH CENTRAL COAST			0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	1	0	0
SOUTH COAST				32	33	15	24	12	4	8	7	17	0	6	0	5	0	6	0	0

Table B-15 ** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

$PM_{2.5}$

Maximum 24-Hour Concentration (State) (ug/m^3)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS														40.7	68.0	76.0	68.0	44.0	81.0	27.0
LAKE COUNTY														14.5	10.0	15.1	74.7	21.9	18.1	11.3
LAKE TAHOE														21.0	23.0	31.0	27.0	27.4	23.2	
MOJAVE DESERT														47.6	38.6	35.0	38.0	28.0	34.0	28.0
MOUNTAIN COUNTIES														92.0	48.0	120.0	41.0	54.0	148.4	179.7
NORTH CENTRAL COAST														31.3	26.4	25.6	23.5	15.9	22.6	21.7
NORTH COAST														36.9	24.0	38.3	59.7	36.1	25.6	31.8
NORTHEAST PLATEAU														40.0	38.0	35.0	5.0	10.0		26.0
SACRAMENTO VALLEY													96.0	108.0	123.1	128.2	96.1	73.2	76.3	82.7
SALTON SEA														52.5	84.2	60.2	142.7	153.6	76.0	85.2
SAN DIEGO														64.3	66.3	60.0	53.6	239.2	67.3	44.1
SAN FRANCISCO BAY AREA														90.5	67.2	107.5	84.5	56.1	73.7	54.6
SAN JOAQUIN VALLEY														136.0	160.0	154.7	104.3	84.5	77.0	102.1
SOUTH CENTRAL COAST														64.6	55.3	57.7	46.4	116.0	91.9	51.1
SOUTH COAST														121.4	119.6	104.0	82.1	121.2	93.8	132.6

Table B-16

Maximum 24-Hour Concentration (National) (ug/m^3)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS														40.7	68.0	76.0	68.0	44.0	81.0	27.0
LAKE COUNTY														14.5	10.0	15.1	74.7	21.9	18.1	11.3
LAKE TAHOE														21.0	23.0	31.0	27.0	21.0	20.0	
MOJAVE DESERT														47.6	38.6	35.0	38.0	28.0	34.0	28.0
MOUNTAIN COUNTIES														92.0	48.0	120.0	41.0	43.0	44.0	60.0
NORTH CENTRAL COAST														31.3	26.4	25.6	23.5	15.9	22.6	21.7
NORTH COAST														36.9	24.0	38.3	59.7	36.1	25.6	31.8
NORTHEAST PLATEAU														40.0	38.0	35.0	5.0	10.0		26.0
SACRAMENTO VALLEY													96.0	108.0	98.0	78.0	91.0	65.0	65.0	80.0
SALTON SEA														52.5	84.2	60.2	46.5	65.1	74.2	67.6
SAN DIEGO														64.3	66.3	60.0	53.6	239.2	67.3	44.1
SAN FRANCISCO BAY AREA														90.5	67.2	107.5	76.7	56.1	73.7	54.6
SAN JOAQUIN VALLEY														136.0	160.0	154.7	90.7	67.8	71.0	92.5
SOUTH CENTRAL COAST														64.6	55.3	57.7	46.4	116.0	41.2	42.4
SOUTH COAST														121.4	119.6	98.0	82.1	121.2	93.8	132.6

Table B-17

$PM_{2.5}$

98th Percentile 24-Hour Concentration (ug/m3)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS															67.0	23.0	64.0	8.0		
LAKE COUNTY															9.4	11.3	46.3	15.1	9.0	10.5
LAKE TAHOE														21.0	22.0	26.0		19.0		
MOJAVE DESERT														23.5	23.0	21.0	34.0	23.0	20.0	20.0
MOUNTAIN COUNTIES														84.0	30.0	43.0	30.0	40.0	33.0	27.0
NORTH CENTRAL COAST														25.0	21.5	23.1	22.8	14.0	15.5	14.2
NORTH COAST														27.7	21.5	29.0	39.7	15.2	23.1	15.2
NORTHEAST PLATEAU														27.0	37.0					
SACRAMENTO VALLEY													96.0	84.0	81.0	78.0	77.0	43.0	54.0	54.0
SALTON SEA														39.5	56.0	33.0	44.1	24.9	31.9	22.1
SAN DIEGO														35.7	32.5	40.8	36.0	46.9	37.4	30.2
SAN FRANCISCO BAY AREA															55.3	85.6	62.3	37.4	42.2	39.8
SAN JOAQUIN VALLEY														120.0	108.0	96.0	80.4	56.0	54.0	74.9
SOUTH CENTRAL COAST														35.4	41.0	50.7	35.2	33.4	36.7	26.3
SOUTH COAST														85.6	83.0	74.3	66.3	76.6	72.4	58.3

Table B-18

$PM_{2.5}$

Average of Quarterly Means (State) (ug/m³)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																5.5				
LAKE COUNTY																4.1	6.3	4.4	4.4	4.8
LAKE TAHOE														8.3	7.8	8.2		7.2		
MOJAVE DESERT														11.2		11.5	13.9	9.4	10.8	8.9
MOUNTAIN COUNTIES														11.1	9.0	8.1	9.9	8.6	11.7	10.6
NORTH CENTRAL COAST															7.9	9.1	9.1	7.3		6.8
NORTH COAST														9.1		9.4	9.1	7.4	7.0	6.2
NORTHEAST PLATEAU															8.5					
SACRAMENTO VALLEY														17.5	15.8	11.9	15.1	15.9	16.5	13.8
SALTON SEA															11.2		15.1	11.4	16.1	15.5
SAN DIEGO																	15.5	14.4	14.1	
SAN FRANCISCO BAY AREA															11.6	12.9	14.0	11.7	11.6	11.8
SAN JOAQUIN VALLEY														23.4	23.9	20.8	24.1	24.8	18.2	22.4
SOUTH CENTRAL COAST														9.6		14.9	9.5	12.4	12.5	11.7
SOUTH COAST															24.0	25.0	25.8	24.8	16.6	21.0

Table B-19

Average of Quarterly Means (National) (ug/m³)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																5.5	8.4			
LAKE COUNTY															4.3	4.2	6.3	4.4	4.4	4.8
LAKE TAHOE														8.3	7.8	8.2		7.2		
MOJAVE DESERT														11.9	12.0	11.5	13.9	11.4	10.8	9.4
MOUNTAIN COUNTIES														11.1	9.0	15.6	9.9	13.3	11.7	10.6
NORTH CENTRAL COAST														9.8	7.9	9.1	9.1	7.4	7.0	6.8
NORTH COAST														9.1	9.1	9.4	9.1	7.4	8.2	6.2
NORTHEAST PLATEAU														7.9	8.5					
SACRAMENTO VALLEY														17.5	15.8	13.0	15.1	12.2	15.1	12.3
SALTON SEA														15.2	16.9	12.2	15.1	11.4	11.8	9.1
SAN DIEGO														18.0	15.8	17.7	16.0	15.5	14.1	11.8
SAN FRANCISCO BAY AREA														16.8	13.6	12.8	14.0	11.7	11.6	11.8
SAN JOAQUIN VALLEY														27.7	23.9	22.5	24.1	19.7	18.9	19.9
SOUTH CENTRAL COAST														13.8	10.3	14.9	14.6	14.2	12.6	11.2
SOUTH COAST														31.0	28.3	31.0	27.4	24.8	22.1	21.0

Table B-20

Carbon Monoxide

Peak 8-Hour Indicator (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	7.2	7.0	5.9	5.8	5.7	5.6	3.5	5.0	4.7	4.6	4.0	4.0	3.9		2.9	2.5	2.5			
LAKE COUNTY				1.9	2.9	2.9														
LAKE TAHOE	15.5	14.9	13.2	12.6	11.9	11.1	10.2	8.7	8.3	7.8	7.0	5.6	5.0	2.3	2.1	1.9	2.0	1.9	1.9	
MOJAVE DESERT	5.2	4.9	4.6	5.5	7.7	7.6	6.5	6.2	6.1	5.8	7.4	4.8	4.4	4.4	4.6	4.8	2.0	2.0	2.0	1.9
MOUNTAIN COUNTIES	4.5	4.5		4.1	4.3		2.9	2.9	2.8	2.8	2.7	2.4	5.1	5.4	5.7	2.4	1.6	1.6	4.8	2.8
NORTH CENTRAL COAST	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.0	2.0	2.0	1.6	1.6	1.5	1.4	1.2	1.2
NORTH COAST	5.2	3.4		4.6	4.6			2.4		3.2	3.4	3.3	3.1	3.6	3.4	3.3	2.6	2.3	2.0	1.8
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2	4.4
SALTON SEA	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	17.4	18.8	17.8	17.4	15.5	15.5	14.8	14.3	12.8	11.5	10.5	8.4
SAN DIEGO	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6	4.4
SAN FRANCISCO BAY AREA	14.0	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	5.5	4.0	3.7
SAN JOAQUIN VALLEY	13.9	13.9	14.1	13.7	13.9	13.2	11.5	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	6.4	5.3	4.8	4.2	3.7
SOUTH CENTRAL COAST	9.9	10.1	9.0	8.8	8.2	7.5	6.4	5.5	5.9	6.0	5.8	5.0	4.8	4.5	4.7	3.1	2.7	2.7	2.4	1.9
SOUTH COAST	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3	7.1

Table B-21

Carbon Monoxide

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	11.0	9.0	13.0	12.0	10.0	11.0	11.0	13.0	9.0	10.0	6.0	8.2	6.7		4.2	15.4	3.8			
LAKE COUNTY				3.0	6.0	7.0														
LAKE TAHOE	20.0	19.0	19.0	17.0	18.0	14.0	15.0	13.0	11.6	9.5	10.4	7.7	7.5	3.2	5.4	2.9	3.8	2.4	2.2	
MOJAVE DESERT	9.0	12.0	11.0	13.0	11.0	10.0	9.0	8.0	9.1	7.5	8.4	5.9	5.4	10.3	6.0	6.1	3.4	3.9	2.9	3.3
MOUNTAIN COUNTIES	6.0	3.0		6.0	5.0	1.0	6.2	10.0	9.3	9.3	4.5	6.6	6.7	4.1	5.0	6.2	3.7	2.5	6.5	2.4
NORTH CENTRAL COAST	4.0	5.0	6.0	5.0	5.0	4.0	4.0	4.0	4.6	3.2	5.5	4.4	3.8	3.8	3.5	3.3	2.3	2.8	2.1	2.1
NORTH COAST	6.0	4.0	1.0	10.0	9.0		1.0	6.0		5.4	4.8	7.4	4.8	5.2	4.4	4.0	3.1	5.3	2.3	2.6
NORTHEAST PLATEAU		12.0	4.0																	
SACRAMENTO VALLEY	20.0	15.0	17.0	18.0	17.0	15.0	14.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	17.2	7.8	8.5	7.3	8.0
SALTON SEA	5.0	5.0	4.0	6.0	5.0	5.0	5.0	6.0	30.6	32.0	27.0	24.0	23.5	22.9	19.9	17.4	15.6	11.8	12.6	12.4
SAN DIEGO	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9	7.9
SAN FRANCISCO BAY AREA	20.0	17.0	15.0	19.0	18.0	15.0	12.0	14.0	12.0	10.1	8.8	10.7	8.7	9.0	9.8	7.6	7.7	8.6	4.8	4.5
SAN JOAQUIN VALLEY	21.0	16.0	19.0	23.0	17.0	19.0	13.0	13.0	15.0	12.0	11.0	9.9	10.3	11.9	10.1	8.4	6.1	5.8	4.6	4.3
SOUTH CENTRAL COAST	18.0	14.0	15.0	11.0	11.0	9.0	12.0	9.0	10.7	8.9	12.6	8.2	8.5	8.2	6.2	8.3	5.7	7.2	4.7	4.0
SOUTH COAST	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.8	11.7	15.8	12.2	10.4	7.4

Table B-22

Maximum 8-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	6.0	6.3	5.0	5.4	4.4	5.0	4.4	4.5	5.4	5.4	3.0	3.4	3.0		2.5	2.5	1.8			
LAKE COUNTY				2.2	2.6	3.1														
LAKE TAHOE	12.5	13.0	12.5	11.3	10.1	9.2	9.9	7.5	7.1	6.3	5.1	3.8	4.3	2.4	1.9	1.9	3.0	1.5	1.2	
MOJAVE DESERT	4.6	4.0	5.9	7.1	8.3	7.1	5.4	5.9	5.6	5.1	7.5	4.0	3.6	5.4	4.3	3.3	2.2	2.1	1.7	1.6
MOUNTAIN COUNTIES	4.2	2.3		4.6	3.5	0.1	4.5	5.4	5.4	3.4	2.6	1.9	5.5	3.0	1.6	4.3	1.5	1.9	5.7	1.2
NORTH CENTRAL COAST	2.3	2.3	2.4	2.4	2.5	2.5	2.9	2.7	2.1	2.1	2.6	1.8	2.2	1.8	1.4	1.6	1.4	1.1	1.2	0.9
NORTH COAST	3.1	3.0	1.0	4.5	3.5		0.6	2.4		3.2	2.7	3.2	3.5	3.7	2.6	2.3	2.5	2.2	1.8	1.5
NORTHEAST PLATEAU		10.4	1.8																	
SACRAMENTO VALLEY	13.9	10.0	12.3	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1	4.2
SALTON SEA	3.6	2.9	2.1	2.9	2.3	2.5	2.4	2.0	13.1	22.9	22.1	17.8	14.4	17.9	15.5	12.3	11.6	8.8	10.3	9.0
SAN DIEGO	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1	4.7
SAN FRANCISCO BAY AREA	12.6	10.0	12.8	12.0	11.0	11.0	7.8	7.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	5.1	4.4	3.4	3.1
SAN JOAQUIN VALLEY	16.3	12.9	16.5	13.4	11.5	11.4	8.3	9.3	8.9	9.1	7.7	7.5	8.0	7.8	6.6	6.0	4.5	4.1	3.0	3.0
SOUTH CENTRAL COAST	8.6	7.5	7.4	7.4	5.8	6.4	5.9	4.8	6.5	5.8	4.9	4.1	4.6	4.2	4.3	3.4	2.4	3.7	2.6	1.7
SOUTH COAST	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5	5.9

Table B-23

Carbon Monoxide

Days Above State 8-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0			
LAKE COUNTY				0	0	0														
LAKE TAHOE	96	87	80	67	39	24	13	12	9	1	0	0	0	0	0	0	0	0	0	
MOJAVE DESERT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOUNTAIN COUNTIES	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU		1	0																	
SACRAMENTO VALLEY	13	5	12	22	14	9	0	2	0	0	0	0	0	0	0	0	0	0	0	0
SALTON SEA	0	0	0	0	0	0	0	0	10	17	11	15	12	13	8	6	4	0	1	0
SAN DIEGO	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
SAN FRANCISCO BAY AREA	8	2	4	10	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY	13	4	5	24	10	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0
SOUTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH COAST	58	50	73	71	50	51	39	29	27	17	26	18	13	11	6	0	1	0	0	0

Table B-24

** Data for Lake Tahoe reflects the number of days above the State 8-Hr. Lake Tahoe Standard of 6 parts per million.*

Days Above National 8-Hour Standard

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0			
LAKE COUNTY				0	0	0														
LAKE TAHOE	10	12	9	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
MOJAVE DESERT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOUNTAIN COUNTIES	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU		1	0																	
SACRAMENTO VALLEY	12	3	9	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALTON SEA	0	0	0	0	0	0	0	0	9	15	9	10	8	11	6	6	3	0	1	0
SAN DIEGO	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
SAN FRANCISCO BAY AREA	8	1	4	9	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY	11	4	6	18	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH COAST	49	40	65	67	42	41	34	19	19	14	19	13	10	7	3	0	1	0	0	0

Table B-25

Nitrogen Dioxide

Peak 1-Hour Indicator (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.073	0.076	0.073	0.074	0.078	0.076	0.078	0.062	0.061	0.062	0.062	0.061	0.060	0.057	0.058	0.057	0.056	0.055	0.054	
MOJAVE DESERT	0.130	0.134	0.112	0.100	0.181	0.259	0.277	0.289	0.202	0.124	0.119	0.097	0.102	0.105	0.106	0.099	0.096	0.092	0.092	0.090
MOUNTAIN COUNTIES	0.046	0.046														0.068	0.063	0.062	0.062	
NORTH CENTRAL COAST	0.083	0.083	0.077	0.072	0.071	0.068	0.062	0.064	0.064	0.062	0.059	0.059	0.059	0.054	0.046	0.045	0.046	0.046	0.050	0.051
NORTH COAST								0.054	0.053	0.053	0.053	0.049	0.050	0.054	0.053	0.052	0.042	0.045	0.044	0.039
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.095	0.091	0.107	0.097	0.095	0.085	0.089	0.091	0.084
SALTON SEA	0.085	0.083	0.084	0.089	0.092	0.091	0.088	0.088	0.153	0.182	0.178	0.178	0.150	0.145	0.170	0.161	0.153	0.147	0.128	0.113
SAN DIEGO	0.193	0.203	0.216	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119	0.121
SAN FRANCISCO BAY AREA	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100	0.075	0.079	0.080
SAN JOAQUIN VALLEY	0.148	0.145	0.144	0.151	0.156	0.134	0.132	0.132	0.131	0.127	0.119	0.115	0.100	0.107	0.106	0.109	0.107	0.106	0.097	0.087
SOUTH CENTRAL COAST	0.132	0.130	0.123	0.119	0.119	0.120	0.114	0.104	0.104	0.112	0.114	0.110	0.097	0.089	0.086	0.083	0.079	0.073	0.069	0.066
SOUTH COAST	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.185	0.213	0.216	0.200	0.161	0.150	0.142

Table B-26

Nitrogen Dioxide

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.080	0.080	0.070	0.070	0.150	0.060	0.060	0.060	0.057	0.059	0.061	0.051	0.052	0.060	0.052	0.054	0.055	0.052	0.055	
MOJAVE DESERT	0.150	0.130	0.100	0.120	0.190	0.350	0.240	0.360	0.138	0.140	0.087	0.107	0.196	0.113	0.105	0.102	0.101	0.095	0.103	0.087
MOUNTAIN COUNTIES	0.050	0.040													0.086	0.090	0.088	0.059	0.068	
NORTH CENTRAL COAST	0.110	0.070	0.070	0.070	0.060	0.060	0.070	0.070	0.067	0.054	0.060	0.056	0.085	0.054	0.071	0.042	0.049	0.053	0.139	0.052
NORTH COAST			0.030				0.080	0.050	0.079	0.078	0.044	0.061	0.052	0.066	0.042	0.052	0.080	0.053	0.037	0.037
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.172	0.090	0.102	0.146	0.079
SALTON SEA	0.080	0.080	0.110	0.090	0.090	0.090	0.090	0.090	0.227	0.217	0.164	0.128	0.257	0.286	0.192	0.139	0.138	0.189	0.108	0.131
SAN DIEGO	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125	0.109
SAN FRANCISCO BAY AREA	0.160	0.170	0.160	0.150	0.150	0.150	0.110	0.120	0.107	0.116	0.108	0.118	0.098	0.128	0.114	0.108	0.080	0.081	0.073	0.074
SAN JOAQUIN VALLEY	0.190	0.150	0.210	0.210	0.160	0.130	0.190	0.160	0.144	0.119	0.110	0.103	0.112	0.108	0.099	0.115	0.107	0.092	0.083	0.087
SOUTH CENTRAL COAST	0.150	0.150	0.160	0.120	0.160	0.160	0.100	0.110	0.133	0.127	0.110	0.115	0.097	0.099	0.124	0.113	0.064	0.103	0.071	0.070
SOUTH COAST	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.255	0.307	0.214	0.251	0.262	0.163	0.157	0.136

Table B-27

Maximum Annual Average (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.010	0.012	0.012		0.012	0.012		0.011	0.012	0.011	0.011	0.011	0.010	0.011	0.011	0.011	0.012	0.010		
MOJAVE DESERT	0.021	0.016	0.018	0.026	0.019	0.014	0.025	0.020	0.024	0.023	0.021	0.020	0.022	0.024	0.025	0.024	0.025	0.024	0.023	0.022
MOUNTAIN COUNTIES																		0.002		
NORTH CENTRAL COAST	0.014	0.005	0.014	0.014	0.012	0.011	0.012	0.012	0.012		0.011	0.010	0.010	0.005	0.007	0.007	0.007	0.006	0.007	0.008
NORTH COAST									0.008	0.009		0.010	0.010	0.010	0.011	0.010	0.010	0.009	0.009	0.008
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.017	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017	0.016
SALTON SEA		0.019	0.022	0.024	0.021	0.021		0.019	0.021	0.021	0.020		0.016	0.018	0.016	0.017	0.016	0.016	0.015	0.015
SAN DIEGO	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023	0.015
SAN FRANCISCO BAY AREA	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024	0.019	0.018	0.017	0.019
SAN JOAQUIN VALLEY	0.030	0.030	0.032	0.033	0.031	0.030	0.027	0.024	0.024	0.029	0.029	0.024	0.023	0.027	0.024	0.022	0.024	0.020	0.018	0.021
SOUTH CENTRAL COAST	0.022	0.017	0.024	0.027	0.025	0.024	0.022	0.023	0.022	0.024	0.019	0.020	0.021	0.022	0.020	0.019	0.017	0.015	0.014	0.015
SOUTH COAST	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033	0.031

Table B-28

Oxides of Nitrogen (NOx)

Maximum 1-Hour Concentration (ppm)**

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.210	0.190	0.220	0.290	0.270	0.190	0.180	0.120	0.139	0.132	0.140	0.109	0.128	0.126	0.134	0.113	0.138	0.175	0.144	
MOJAVE DESERT	0.400	0.400	0.790	0.410	0.500	0.440	0.710	0.440	0.455	0.410	0.423	0.510	0.465	0.585	0.537	0.454	0.469	0.471	0.473	0.458
MOUNTAIN COUNTIES	0.080	0.060													0.19	0.216	0.188	0.28	0.208	0.1002
NORTH CENTRAL COAST	0.180	0.230	0.310	0.240	0.220	0.220	0.240	0.210	0.239	0.277	0.295	0.257	0.223	0.238	0.143	0.154	0.164	0.14	0.224	0.091
NORTH COAST			0.050				0.210	0.290	0.573											
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.470	0.390	0.790	0.788	0.920	0.700	0.770	0.730	0.737	0.571	0.604	0.698	0.618	0.582	0.541	0.648	0.991	0.52	0.392	0.424
SALTON SEA	0.230	0.210	0.210	0.320	0.270	0.230	0.220	0.220	0.917	0.918	0.835	0.677	0.758	0.773	0.822	0.793	0.785	0.656	0.681	0.861
SAN DIEGO	0.930	0.800	0.980	0.780	0.760	0.640	0.660	0.531	0.605	0.506	0.606	0.609	0.486	0.609	0.598	0.632	0.605	0.658	0.657	0.682
SAN FRANCISCO BAY AREA	0.760	0.720	0.750	0.870	0.850	0.760	0.630	0.810	0.625	0.548	0.831	0.593	0.544	0.586	0.56	0.519	0.42	0.398	0.424	0.392
SAN JOAQUIN VALLEY	1.060	0.710	0.870	0.870	0.840	0.760	0.650	0.640	0.702	0.600	0.659	0.560	0.671	0.700	0.556	0.652	0.438	0.407	0.407	0.397
SOUTH CENTRAL COAST	0.700	0.810	0.680	0.600	0.600	0.630	0.570	0.470	0.561	0.575	0.823	0.454	0.536	0.550	0.43	0.276	0.314	0.395	0.273	0.308
SOUTH COAST	1.170	1.080	1.280	1.200	0.990	1.200	1.420	1.060	1.108	0.850	1.037	0.910	0.889	0.899	0.855	0.75	0.892	0.738	0.85	0.605

* No NOx data available
** All available data were used for the annual maximum 1-hour NOx.
*** SFB NOx for 1994-2003 was calculated using hourly NO + NO2

Table B-29

Maximum Annual Average (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.021	0.022	0.021		0.022	0.022			0.018	0.016	0.015	0.015	0.012	0.014	0.015	0.015	0.015	0.013		
MOJAVE DESERT	0.042	0.027	0.044	0.049	0.022	0.032	0.046	0.037	0.048	0.047	0.043	0.037	0.047	0.055	0.051	0.049	0.053	0.050	0.049	0.048
MOUNTAIN COUNTIES																		0.004		
NORTH CENTRAL COAST	0.020	0.006	0.022	0.021	0.023	0.022	0.021	0.020	0.019		0.017	0.017	0.015	0.008	0.011		0.011	0.010	0.010	0.010
NORTH COAST																				
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.044	0.039	0.045	0.043	0.056	0.055	0.042	0.029	0.047	0.043	0.045	0.042	0.043	0.047	0.045	0.038	0.042	0.027	0.033	0.034
SALTON SEA		0.023	0.028	0.030	0.026	0.026		0.025	0.026	0.033	0.028		0.021	0.037	0.021	0.022	0.033	0.028	0.030	0.030
SAN DIEGO	0.058	0.068	0.077	0.066	0.061	0.058	0.058	0.050	0.053	0.046	0.047	0.050	0.045	0.055	0.049		0.044	0.041	0.041	0.032
SAN FRANCISCO BAY AREA	0.079	0.066	0.072	0.083	0.075		0.065	0.068	0.066	0.056	0.054	0.055	0.052	0.057	0.054	0.051	0.046	0.035	0.032	0.040
SAN JOAQUIN VALLEY	0.066	0.080	0.074	0.078	0.078	0.068	0.058	0.047	0.049	0.050	0.052	0.045	0.044	0.051	0.049	0.043	0.045	0.040	0.035	0.036
SOUTH CENTRAL COAST	0.063	0.028	0.040	0.061	0.039	0.051	0.052	0.049	0.052	0.041	0.042	0.043	0.045	0.048	0.034	0.018	0.027	0.025	0.022	0.022
SOUTH COAST	0.130	0.118	0.132	0.137	0.121	0.118	0.121	0.106	0.129	0.108	0.106	0.127	0.119	0.133	0.115	0.102	0.098	0.089	0.081	0.079

* No NOx data available
** No Valid Annual Averages
*** SFB NOx for 1994-2003 was calculated using hourly NO + NO2

Representative Days: The data collected must be representative according to the following definition. There must be no more than two missing hours in any of the three consecutive eight hour periods within a day. For an entire day, no more than two consecutive hours can be missed. Therefore, for an entire day, if there were three consecutive hours missed, the day would be invalidated. Representative Days were used for all years except 1994-2003.

Data Represenativeness: For representative statistics computed from all individual values, such as the mean of all hours, 75 percent of the values in the respective period are required. Data Representativeness of 75% was applied to daily (94-03), monthly, and annual values.

Table B-30

Sulfur Dioxide

Peak 1-Hour Indicator (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.03	0.03	0.07	0.06	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.04	0.05	0.04	0.03	0.01	0.01	0.01	0.02	0.03	0.03	0.03	0.02
NORTH COAST								0.01	0.01											
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.03		0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
SALTON SEA											0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.00	0.00	0.00
SAN DIEGO	0.06	0.06	0.07	0.07	0.07	0.06	0.08	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.04
SAN FRANCISCO BAY AREA	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.05	0.04	0.05	0.04
SAN JOAQUIN VALLEY	0.09	0.08	0.07	0.06	0.06	0.04	0.04	0.03	0.02	0.02	0.03	0.03		0.01	0.02	0.02				
SOUTH CENTRAL COAST	0.32	0.32	0.25	0.16	0.16	0.14	0.13	0.13	0.03	0.16	0.17	0.16	0.16	0.14	0.14	0.14	0.16	0.14	0.13	0.14
SOUTH COAST	0.09	0.07	0.07	0.06	0.06	0.06	0.11	0.10	0.10	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.04

Table B-31

Sulfur Dioxide

Maximum 24-Hour Concentration (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.01	0.00	0.02	0.03	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00
NORTH COAST			0.01				0.01	0.00	0.00											
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.01		0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00
SALTON SEA									0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00
SAN DIEGO	0.03	0.04	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.01
SAN FRANCISCO BAY AREA	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.02	0.01	0.01	0.01
SAN JOAQUIN VALLEY	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.00	0.01		0.00		
SOUTH CENTRAL COAST	0.06	0.04	0.04	0.02	0.09	0.02	0.02	0.05	0.01	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.02	0.02	0.03	0.01
SOUTH COAST	0.04	0.02	0.04	0.02	0.04	0.02	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.04	0.02	0.02	0.01	0.02	0.01

Table B-32

Maximum Annual Average (ppm)

AIR BASIN	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NORTH COAST			0.00				0.00	0.00	0.00											
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.00		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SALTON SEA									0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN DIEGO	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
SAN FRANCISCO BAY AREA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN JOAQUIN VALLEY	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00		0.00		
SOUTH CENTRAL COAST	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH COAST	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Table B-33

Ozone Exposures Over the State 1-Hour Standard: Population-Weighted (ppm-hours / person)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
South Coast Air Basin																					
Exposure	36.90	35.68	31.41	34.28	29.58	22.10	22.21	21.99	17.96	18.90	13.26	10.67	6.28	8.90	3.28	5.33	6.95	7.16	8.92	5.21	5.48
% Pop. Represented*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	100%	92%	98%	99%	100%	88%	78%	91%	83%	77%
San Francisco Bay Area Air Basin																					
Exposure	1.45	0.85	1.81	1.24	0.67	0.46	0.48	0.54	0.41	0.26	1.06	1.03	0.10	0.95	0.62	0.33	0.35	0.35	0.32	0.11	0.15
% Pop. Represented	73%	46%	72%	73%	53%	41%	45%	50%	72%	39%	81%	60%	48%	54%	65%	25%	48%	28%	62%	30%	40%
San Joaquin Valley Air Basin																					
Exposure	8.09	10.00	10.09	9.38	7.12	5.21	6.09	5.64	6.18	6.43	6.10	6.96	3.73	6.63	4.51	4.63	4.75	5.84	5.24	3.28	2.39
% Pop. Represented	97%	95%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	97%	97%
San Diego Air Basin																					
Exposure	8.17	5.16	5.64	7.40	7.29	6.35	3.92	3.31	2.74	2.28	2.41	1.19	0.83	1.93	0.60	0.52	0.71	0.38	0.45	0.24	0.16
% Pop. Represented	100%	100%	100%	100%	100%	100%	100%	100%	100%	79%	100%	98%	100%	82%	69%	72%	89%	62%	36%	71%	10%
Broader Sacramento Metropolitan Area																					
Exposure	2.88	2.57	3.19	4.22	1.83	2.14	2.47	2.35	1.10	1.76	2.20	1.85	0.51	1.98	1.45	1.15	1.08	1.52	1.15	0.43	0.99
% Pop. Represented	93%	94%	100%	100%	100%	100%	99%	100%	100%	95%	100%	100%	98%	100%	100%	99%	100%	99%	97%	94%	99%

* *% Population Represented* is the percent of the total population residing in an area exposed to an ozone concentration above the level of the State standard for at least one hour during the year.

Table B-34

APPENDIX C

Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants

Appendix C: ***Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants***

List of Tables

List of Tables (continued)

Introduction

This appendix contains TAC emissions data for all counties in California. It also contains air quality and health risk data for the state as a whole, the five most populous air basins, and individual sites within these air basins. The five basins are the South Coast Air Basin, San Francisco Bay Area Air Basin, San Joaquin Valley Air Basin, San Diego Air Basin, and Sacramento Valley Air Basin. It is important to note that some counties are located in more than one air basin. For these counties, the data are provided for that portion of the county located in each air basin. The ten toxic air contaminants (TACs) presented here are the same as the TACs discussed in Chapter 5: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-Dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Based on available data, these TACs pose the most substantial ambient health risks in California. There may be other TACs that pose a substantial risk, but for which data are not available.

The countywide emissions data represent tons per year from the 2006 emission inventory year. The data for stationary sources include emissions data from the air toxics "Hot Spots" Program. The toxic air contaminant emissions for each area-wide and mobile source category are calculated by applying a speciation profile, maintained by ARB staff, to the total organic gas and total particulate matter criteria pollutant emissions associated with that category.

For all source categories associated with diesel fuel combustion, all "PM" emitted from these sources was considered "diesel PM." The area-wide source emission estimates were made by either the local districts or the ARB staff. These estimates have been speciated for toxics. The other mobile source emission estimates are primarily from ARB's OFFROAD model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local districts or ARB staff. Districts may also provide estimates for categories normally developed by ARB staff. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC 2007. Again, the emission estimates have been speciated for toxics.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB's October 2000 report entitled: *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles"* (Diesel Risk Reduction Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC 2001 (EMFAC1.99(f) 6/26/00) and the other mobile inventory includes revised estimates for ship diesel PM emissions.

In addition to the emissions data, air quality and health risk data are available for 1990 through 2005. It is important to note that the data reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. Therefore, the ambient concentrations and health risks for other locations may be higher or lower. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here.

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Great Basin Valleys Air Basin

TAC	Alpine	Inyo	Mono
Acetaldehyde	4	28	28
Benzene	6	39	15
1,3-Butadiene	1	10	6
Carbon Tetrachloride	0	0	0
Chromium, Hexavalent	< .01	< .01	< .01
para-Dichlorobenzene	< 1	< 1	< 1
Formaldehyde	9	57	43
Methylene Chloride	< 1	2	1
Perchloroethylene	< 1	2	2
Diesel PM	6	51	36

Table C-1

Lake County Air Basin

TAC	Lake
Acetaldehyde	49
Benzene	82
1,3-Butadiene	65
Carbon Tetrachloride	0
Chromium, Hexavalent	< .01
para-Dichlorobenzene	3
Formaldehyde	101
Methylene Chloride	8
Perchloroethylene	9
Diesel PM	51

Table C-2

Lake Tahoe Air Basin

TAC	El Dorado[1]	Placer[1]
Acetaldehyde	42	21
Benzene	24	11
1,3-Butadiene	7	3
Carbon Tetrachloride	< .01	0
Chromium, Hexavalent	< .01	< .01
para-Dichlorobenzene	2	< 1
Formaldehyde	74	30
Methylene Chloride	5	4
Perchloroethylene	5	2
Diesel PM	42	14

Table C-3

[1] This Air Basin includes only a portion of this county.

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Mojave Desert Air Basin

TAC	Kern[1]	Los Angeles[1]	Riverside[1]	San Bernardino[1]
Acetaldehyde	189	92	57	387
Benzene	113	91	23	425
1,3-Butadiene	59	21	4	109
Carbon Tetrachloride	0.01	< .01	0	0.03
Chromium, Hexavalent	0.29	0.03	< .01	0.02
para-Dichlorobenzene	6	14	1	19
Formaldehyde	495	219	117	915
Methylene Chloride	16	103	5	79
Perchloroethylene	16	39	4	94
Diesel PM	583	334	351	1759

Table C-4 [1] This Air Basin includes only a portion of this county.

Mountain Counties Air Basin

TAC	Amador	Calaveras	El Dorado	Mariposa	Nevada	Placer[1]	Plumas	Sierra	Tuolumne
Acetaldehyde	32	49	86	27	122	40	51	14	63
Benzene	28	64	73	40	68	38	54	36	88
1,3-Butadiene	7	26	18	15	20	22	84	25	99
Carbon Tetrachloride	0	0	0	0	0	0	0	0	0
Chromium, Hexavalent	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01
para-Dichlorobenzene	1	2	6	< 1	4	1	< 1	< 1	2
Formaldehyde	53	92	135	52	185	81	91	36	129
Methylene Chloride	5	5	17	2	21	7	2	< 1	9
Perchloroethylene	5	3	18	2	6	4	3	< 1	8
Diesel PM	27	41	43	13	145	139	46	5	52

Table C-5 [1] This Air Basin includes only a portion of this county.

North Central Coast Air Basin

TAC	Monterey	San Benito	Santa Cruz
Acetaldehyde	119	36	75
Benzene	179	28	87
1,3-Butadiene	74	17	16
Carbon Tetrachloride	0	0	< .01
Chromium, Hexavalent	< .01	< .01	< .01
para-Dichlorobenzene	17	2	11
Formaldehyde	279	76	141
Methylene Chloride	73	9	56
Perchloroethylene	60	8	38
Diesel PM	346	180	127

Table C-6

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

North Coast Air Basin

TAC	Del Norte	Humboldt	Mendocino	Sonoma[1]	Trinity
Acetaldehyde	20	92	79	30	24
Benzene	13	77	64	41	25
1,3-Butadiene	31	77	16	9	87
Carbon Tetrachloride	0	0	0	0	0
Chromium, Hexavalent	< .01	< .01	0.01	< .01	< .01
para-Dichlorobenzene	1	5	4	2	< 1
Formaldehyde	31	155	138	62	43
Methylene Chloride	4	18	13	13	2
Perchloroethylene	4	18	14	9	2
Diesel PM	18	187	183	78	37

Table C-7 [1] This Air Basin includes only a portion of this county.

Northeast Plateau Air Basin

TAC	Lassen	Modoc	Siskiyou
Acetaldehyde	53	24	101
Benzene	43	9	58
1,3-Butadiene	26	22	98
Carbon Tetrachloride	0	0	0
Chromium, Hexavalent	< .01	< .01	< .01
para-Dichlorobenzene	1	< 1	2
Formaldehyde	88	40	169
Methylene Chloride	4	1	6
Perchloroethylene	5	1	6
Diesel PM	58	48	259

Table C-8

Outer Continental Shelf Air Basin

TAC	Del Norte	Humboldt	Los Angeles	Marin	Mendocino	Monterey	Orange	San Diego	San Francisco	San Luis Obispo	San Mateo	Santa Barbara	Santa Cruz	Sonoma	Ventura
Acetaldehyde	0	5	41	0	3	9	0	20	1	4	1	11	0	3	11
Benzene	1	4	16	1	3	6	1	7	2	4	6	49	1	2	7
1,3-Butadiene	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0	1
Carbon Tetrachloride	0	0	0	0	0	0	0	0	0	0	0	< .01	0	0	0
Chromium (Hexavalent)	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	0.00	0.00
para-DiChlorobenzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Formaldehyde	< 1	10	83	< 1	7	18	< 1	40	3	8	2	55	< 1	6	24
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	< 1	0	0	0
Perchloroethylene	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Diesel PM	125	351	734	112	303	474	150	570	211	364	697	2003	124	150	418

Table C-9

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Sacramento Valley Air Basin

TAC	Butte	Colusa	Glenn	Placer[1]	Sacramento	Shasta	Solano[1]	Sutter	Tehama	Yolo	Yuba
Acetaldehyde	119	29	31	95	270	177	71	55	75	76	49
Benzene	100	40	32	103	325	139	72	71	44	65	48
1,3-Butadiene	59	14	30	21	64	57	15	9	72	20	16
Carbon Tetrachloride	0	0	0	0	0.05	0	0	0	< .01	0	0
Chromium, Hexavalent	< .01	< .01	< .01	< .01	0.01	< .01	< .01	< .01	< .01	< .01	< .01
para-Dichlorobenzene	9	< 1	1	10	55	7	5	4	2	8	3
Formaldehyde	236	89	60	206	583	320	155	135	130	158	120
Methylene Chloride	31	2	3	57	182	21	19	10	7	26	7
Perchloroethylene	28	3	4	33	251	24	14	12	8	25	9
Diesel PM	284	130	125	180	792	377	327	252	254	369	68

Table C-10 [1] This Air Basin includes only a portion of this county.

Salton Sea Air Basin

TAC	Imperial	Riverside[1]
Acetaldehyde	113	129
Benzene	163	98
1,3-Butadiene	27	22
Carbon Tetrachloride	0	< .01
Chromium, Hexavalent	0.06	< .01
para-Dichlorobenzene	7	16
Formaldehyde	273	281
Methylene Chloride	19	69
Perchloroethylene	22	51
Diesel PM	451	807

Table C-11 [1] This Air Basin includes only a portion of this county.

San Diego Air Basin

TAC	San Diego
Acetaldehyde	589
Benzene	869
1,3-Butadiene	241
Carbon Tetrachloride	0.09
Chromium, Hexavalent	0.23
para-Dichlorobenzene	122
Formaldehyde	1426
Methylene Chloride	367
Perchloroethylene	422
Diesel PM	2083

Table C-12

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

San Francisco Bay Area Air Basin

TAC	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano[1]	Sonoma[1]
Acetaldehyde	381	209	56	44	146	156	298	122	107
Benzene	389	293	97	70	162	192	395	108	130
1,3-Butadiene	74	50	22	29	30	47	78	39	26
Carbon Tetrachloride	< .01	0.93	< .01	< .01	0	< .01	< .01	< .01	< .01
Chromium, Hexavalent	0.01	< .01	< .01	< .01	< .01	0.01	0.02	0.02	< .01
para-Dichlorobenzene	61	40	11	5	33	30	71	12	17
Formaldehyde	816	528	126	99	315	374	682	333	214
Methylene Chloride	216	123	33	17	106	103	265	35	65
Perchloroethylene	169	88	33	14	88	85	172	24	37
Diesel PM	1584	713	121	111	537	337	863	181	249

Table C-13 [1] This Air Basin includes only a portion of this county.

San Joaquin Valley Air Basin

TAC	Fresno	Kern[1]	Kings	Madera	Merced	San Joaquin	Stanislaus	Tulare
Acetaldehyde	351	393	148	87	159	286	168	169
Benzene	314	655	88	80	103	245	144	159
1,3-Butadiene	108	56	38	28	24	51	40	156
Carbon Tetrachloride	0	0	0	0	0	0	0	0
Chromium, Hexavalent	0.04	0.02	0.12	< .01	< .01	0.01	< .01	< .01
para-Dichlorobenzene	36	25	6	6	10	27	21	17
Formaldehyde	746	1392	413	178	333	617	361	356
Methylene Chloride	121	68	15	16	27	75	61	46
Perchloroethylene	159	93	28	22	33	111	81	61
Diesel PM	1519	2099	445	343	825	1213	638	613

Table C-14 [1] This Air Basin includes only a portion of this county.

South Central Coast Air Basin

TAC	San Luis Obispo	Santa Barbara	Ventura
Acetaldehyde	100	139	181
Benzene	124	214	297
1,3-Butadiene	55	58	70
Carbon Tetrachloride	0	< .01	0.05
Chromium, Hexavalent	< .01	< .01	0.03
para-Dichlorobenzene	11	17	33
Formaldehyde	225	346	466
Methylene Chloride	44	107	161
Perchloroethylene	34	61	83
Diesel PM	215	355	575

Table C-15

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

South Coast Air Basin

TAC	Los Angeles[1]	Orange	Riverside[1]	San Bernardino[1]
Acetaldehyde	1343	420	249	290
Benzene	2143	683	353	400
1,3-Butadiene	437	135	84	110
Carbon Tetrachloride	0.07	0.54	0.09	0.06
Chromium, Hexavalent	0.07	0.02	0.01	< .01
para-Dichlorobenzene	383	121	59	60
Formaldehyde	3350	1064	584	669
Methylene Chloride	2078	938	226	271
Perchloroethylene	1263	419	199	212
Diesel PM	6525	1587	1058	1075

Table C-16 [1] This Air Basin includes only a portion of this county.

Air Quality and Health Risk

The air quality and health risk data in the following tables cover the time period of 1990 through 2005. Annual average concentrations and health risks are listed at the statewide level, the air basin level, and site level for California's five most populous air basins. The ten TACs presented here are ones that pose the most substantial ambient health risk in California based on available data: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. It is important to note that there may be other compounds that pose a substantial risk, but for which data are not available.

The ambient data for all TACs except diesel PM are based on concentrations measured at sites in California's TAC monitoring network. In order to calculate a valid annual average (a mean of monthly means), each month during the year must have at least one valid measurement. Therefore, if there are no valid data in any given month, data for the year will appear to be missing, even though some data may be available. The associated health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years.

For diesel PM, the ARB previously made a preliminary estimation of concentrations for the State's 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. Details on the method and the resulting estimates can be found in the ARB report entitled: "R*isk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*," (October 2000).

Numerous factors influence the ambient TAC measurements, and a number of assumptions are embodied in the summary statistics. These factors are described in Chapter 1 under the heading "Interpreting the Emission and Air Quality Statistics." These factors must be considered when using the statistics presented here. Finally, it is important to note that the data provided reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. The ambient concentrations and health risks for other locations may be higher or lower.

California

Statewide Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.73	1.97	1.54	1.76	1.52	0.61	1.34	1.16	1.08	1.29	1	1.1	1.18	1.19	1.12	1.32
	Health Risk	8	10	7	9	7	3	6	6	5	6	5	5	6	6	5	6
Benzene	Annual Avg	2.57	2.14	1.71	1.5	1.58	1.31	0.93	0.85	0.86	0.85	0.71	0.608	0.625	0.565	0.461	0.478
	Health Risk	238	198	158	139	146	121	86	79	80	79	66	56	58	52	43	44
1,3-Butadiene	Annual Avg	0.412	0.341	0.32	0.392	0.343	0.31	0.262	0.234	0.245	0.225	0.183	0.174	0.172	0.117	0.107	0.101
	Health Risk	155	128	120	147	129	117	99	88	92	85	69	65	65	44	40	38
Carbon Tetrachloride	Annual Avg	0.131	0.128		0.106		0.1	0.078		0.114		0.094	0.087	0.091	0.094		
	Health Risk	34	34		28		26	21		30		25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.27	0.22	0.21	0.29	0.13	0.12	0.11	0.11	0.13	0.13	0.101	0.094	0.088	0.091
	Health Risk			40	33	31	43	20	18	17	17	19	19	15	14	13	14
para-Dichlorobenzene	Annual Avg		0.14	0.14	0.14	0.13	0.14	0.12	0.14			0.12	0.14	0.16	0.16	0.16	0.15
	Health Risk		9	9	9	8	9	8	9			8	10	10	10	10	10
Formaldehyde	Annual Avg	2.18	2.07	1.65	2.08	2.18	2.93	3.38	2.89	2.64	3.2	2.55	3.18	3.5	3.15	2.69	2.86
	Health Risk	16	15	12	15	16	22	25	21	19	24	19	23	26	23	20	21
Methylene Chloride	Annual Avg	1.09	1.27	0.75	0.93	0.79	0.77	0.66	0.66	0.62	0.66	0.67	0.36	0.28	0.28	0.25	0.25
	Health Risk	4	4	3	3	3	3	2	2	2	2	2	1	1	1	<1	<1
Perchloroethylene	Annual Avg	0.277	0.271	0.21	0.27	0.18	0.166	0.134	0.116	0.114		0.115	0.089	0.077	0.057	0.046	0.047
	Health Risk	11	11	8	11	7	7	5	5	5		5	4	3	2	2	2
Diesel PM[3]	*Annual Avg*	*(3.0)*					*(2.2)*					*(1.8)*					
	Health Risk	*(900)*					*(660)*					*(540)*					
Average State Risk	w/o Diesel PM	466	409	357	394	347	351	272	228	250	213	218	206	208	177	133	135
	w/ Diesel PM	*(1366)*					*(1011)*					*(758)*					

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-17

South Coast Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	2.46	3	2.46	2.67	2.3	0.97	2.08	1.77	1.54	1.63	1.26	1.47	1.41	1.47	1.46	1.79
	Health Risk	12	15	12	13	11	5	10	9	7	8	6	7	7	7	7	9
Benzene	Annual Avg	3.42	2.91	2.61	2.17	2.4	1.89	1.45	1.34	1.25	1.2	0.97	0.86	0.769	0.745	0.589	0.634
	Health Risk	317	269	242	201	222	175	134	124	116	111	90	80	71	69	55	59
1,3-Butadiene	Annual Avg	0.532	0.452	0.498	0.565	0.497	0.459	0.39	0.378	0.354	0.328	0.251	0.251	0.211	0.147	0.143	0.137
	Health Risk	200	170	187	212	187	173	146	142	133	123	94	94	79	55	54	51
Carbon Tetrachloride	Annual Avg	0.136	0.134		0.105		0.102	0.079		0.114		0.096	0.086	0.092	0.093		
	Health Risk	36	35		28		27	21		30		25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.39	0.29	0.29	0.46	0.18	0.17	0.15	0.14	0.18		0.179	0.158	0.126	0.139
	Health Risk			59	43	43	69	27	25	22	22	27		27	24	19	21
para-Dichlorobenzene	Annual Avg		0.17	0.19	0.17	0.13	0.17	0.11	0.13			0.13	0.15	0.16	0.17	0.16	0.15
	Health Risk		11	13	11	8	11	7	9			9	10	11	11	11	10
Formaldehyde	Annual Avg	2.92	3.08	2.22	3.22	3.14	3.57	5.06	4.47	3.79	4.06	3.13	4.13	4.16	3.83	3.76	4.21
	Health Risk	22	23	16	24	23	26	37	33	28	30	23	30	31	28	28	31
Methylene Chloride	Annual Avg	1.86	1.51	0.9	1.23	1.1	1.28	0.95	1.14	0.85	0.92	0.83	0.63	0.57	0.59	0.57	0.57
	Health Risk	6	5	3	4	4	4	3	4	3	3	3	2	2	2	2	2
Perchloroethylene	Annual Avg	0.576	0.547	0.412	0.448	0.393	0.364	0.32	0.274	0.259		0.207	0.176	0.146	0.105	0.082	0.08
	Health Risk	23	22	16	18	16	15	13	11	10		8	7	6	4	3	3
Diesel PM[3]	*Annual Avg*	*(3.6)*					*(2.7)*					*(2.4)*					
	Health Risk	*(1080)*					*(810)*					*(720)*					
Average Basin Risk	w/o Diesel PM	616	550	548	554	514	505	398	357	349	297	285	253	258	225	179	186
	w/ Diesel PM	*(1696)*					*(1315)*					*(1005)*					

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-18

South Coast Air Basin

Los Angeles County: Azusa

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg											1.1	1.31		1.25	1.53	1.86
	Health Risk											5	6		6	7	9
Benzene	Annual Avg											0.69		0.621	0.598	0.432	0.512
	Health Risk											64		57	55	40	47
1,3-Butadiene	Annual Avg											0.146		0.135	0.076	0.076	0.078
	Health Risk											55		51	29	29	29
Carbon Tetrachloride	Annual Avg											0.093		0.09	0.095		
	Health Risk											24		24	25		
Chromium, Hexavalent	Annual Avg											0.12			0.09	0.073	0.08
	Health Risk											19			14	11	12
para-Dichlorobenzene	Annual Avg											0.1		0.15	0.15	0.15	0.15
	Health Risk											7		10	10	10	10
Formaldehyde	Annual Avg											3.05	3.8		3.45	3.04	3.62
	Health Risk											22	28		25	22	27
Methylene Chloride	Annual Avg											1.32		1	0.96	1.43	1.26
	Health Risk											5		3	3	5	4
Perchloroethylene	Annual Avg											0.183		0.153	0.109	0.063	0.076
	Health Risk											7		6	4	3	3
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk												208	34	151	171	127	141

1 Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-19

South Coast Air Basin

Los Angeles County: Burbank - West Palm Avenue

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	3.16	3.89		3.06	2.46	0.79			1.94	2.7	1.7	1.93	1.96		1.77	2.15
	Health Risk	15	19		15	12	4			9	13	8	9	10		9	10
Benzene	Annual Avg	4.79	3.91	3.44	2.63	3.33	2.45	1.91	1.48	1.66	1.64	1.27	1.06	1.01		0.754	0.832
	Health Risk	444	362	319	244	308	227	177	137	154	151	117	98	93		70	77
1,3-Butadiene	Annual Avg	0.782	0.623	0.725	0.749	0.752	0.605	0.512	0.421	0.483	0.483	0.345	0.328	0.283		0.18	0.196
	Health Risk	294	234	272	282	283	227	192	158	182	181	130	123	106		68	74
Carbon Tetrachloride	Annual Avg	0.141	0.133				0.104	0.082		0.114		0.094	0.086	0.091			
	Health Risk	37	35				28	22		30		25	23	24			
Chromium, Hexavalent	Annual Avg			0.65	0.37	0.43	1.24			0.23	0.2	0.19		0.123		0.113	0.113
	Health Risk			97	55	64	186			34	29	28		18		17	17
para-Dichlorobenzene	Annual Avg		0.23	0.22	0.19	0.14	0.2	0.1	0.11			0.13	0.15	0.17		0.17	0.15
	Health Risk		15	15	12	9	13	7	7			8	10	11		11	10
Formaldehyde	Annual Avg	4.05	3.59		3.66	3.92	4.58			4.72	6.07	4.14	4.87	5.48		3.85	4.42
	Health Risk	30	26		27	29	34			35	45	30	36	40		28	33
Methylene Chloride	Annual Avg	3.25	1.69	1.42	2.01	1.94	1.82	1.41	1.11	1.07		0.8	0.6	0.6		0.41	0.42
	Health Risk	11	6	5	7	7	6	5	4	4		3	2	2		1	1
Perchloroethylene	Annual Avg	1.19	0.785	0.609	0.62	0.663	0.487	0.44	0.365	0.503		0.368	0.296	0.247		0.151	0.135
	Health Risk	48	31	24	25	26	19	18	15	20		15	12	10		6	5
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		879	728	732	667	738	744	421	321	468	419	364	313	314		210	227

1 Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-20

South Coast Air Basin

Los Angeles County: North Main Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	2.68	2.78	2.5	2.89	2.35	1.28	2.33			1.43	0.84	1.45	1.3	1.39	1.24	1.84
	Health Risk	13	13	12	14	11	6	11			7	4	7	6	7	6	9
Benzene	Annual Avg	3.5	3.25	2.97	2.54	2.45	2.24	1.86		1.36	1.5	1.04	1.03		0.853	0.677	0.722
	Health Risk	324	301	275	235	227	207	173		126	139	97	95		79	63	67
1,3-Butadiene	Annual Avg	0.6	0.547	0.643	0.733	0.588	0.599	0.542		0.421	0.432	0.296	0.313		0.186	0.195	0.164
	Health Risk	226	206	242	276	221	225	204		158	162	111	118		70	73	62
Carbon Tetrachloride	Annual Avg	0.138	0.134				0.103	0.079		0.112		0.098	0.086		0.095		
	Health Risk	36	35				27	21		30		26	23		25		
Chromium, Hexavalent	Annual Avg				0.24	0.27	0.23	0.17			0.11	0.13		0.133	0.07		0.125
	Health Risk				36	40	35	25			16	19		20	11		19
para-Dichlorobenzene	Annual Avg		0.19	0.22	0.19	0.16	0.19	0.12				0.16	0.17		0.16	0.17	0.15
	Health Risk		13	14	12	10	13	8				11	11		10	11	10
Formaldehyde	Annual Avg	3.5	3	2.3	3.23	3.54	4.13	5.87			3.88	2.42	4.3	4.32	3.79	5.69	6.64
	Health Risk	26	22	17	24	26	30	43			29	18	32	32	28	42	49
Methylene Chloride	Annual Avg	1.28	2.72	0.68	1.05	1.06	1.51	1.1		0.8	1.2	0.68	0.74		0.59	0.5	0.44
	Health Risk	4	9	2	4	4	5	4		3	4	2	3		2	2	2
Perchloroethylene	Annual Avg	0.551	0.603	0.536	0.588	0.503	0.574	0.502		0.232		0.187	0.177		0.109	0.088	0.087
	Health Risk	22	24	21	24	20	23	20		9		7	7		4	4	3
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		651	623	583	625	559	571	509		326	357	295	296	58	236	201	221

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-21

South Coast Air Basin

Los Angeles County: North Long Beach

Annual Average Concentrations and Health Risks																	
TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Acetaldehyde	Annual Avg	2.49	2.52		2.36	2.18	0.81		1.43			1.16	1.11		1.06	1.19	1.39
	Health Risk	12	12		11	11	4		7			6	5		5	6	7
Benzene	Annual Avg	3.53	2.45	2.6	1.99	2.04	1.69		1.24	1.16	1.11	1		0.705	0.705	0.554	
	Health Risk	327	227	241	185	188	157		115	108	103	92		65	65	51	
1,3-Butadiene	Annual Avg	0.592	0.439	0.523	0.575	0.447	0.448		0.364	0.339	0.323	0.278		0.198	0.142	0.144	
	Health Risk	223	165	197	216	168	169		137	127	121	104		75	53	54	
Carbon Tetrachloride	Annual Avg	0.139	0.129				0.099			0.118		0.097		0.092	0.092		
	Health Risk	37	34				26			31		26		24	24		
Chromium, Hexavalent	Annual Avg			0.44	0.34	0.22	0.25		0.15	0.11	0.12	0.12		0.078		0.09	0.1
	Health Risk			66	51	33	38		22	16	18	18		12		14	15
para-Dichlorobenzene	Annual Avg		0.17	0.26	0.19	0.12	0.17		0.16			0.13		0.18	0.2	0.15	
	Health Risk		11	17	13	8	11		10			8		12	13	10	
Formaldehyde	Annual Avg	2.97	2.76		3.22	3.06	3.29		3.68			2.88	2.96		2.79	2.78	2.91
	Health Risk	22	20		24	23	24		27			21	22		21	20	21
Methylene Chloride	Annual Avg	2.05	0.88	1	1.15	0.84	0.98		0.74	0.6		0.65		0.27	0.31	0.24	
	Health Risk	7	3	3	4	3	3		3	2		2		<1	1	<1	
Perchloroethylene	Annual Avg	0.477	0.355	0.349	0.433	0.321	0.318		0.227	0.193		0.168		0.095	0.076	0.057	
	Health Risk	19	14	14	17	13	13		9	8		7		4	3	2	
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		647	486	538	521	447	445		330	292	242	284	27	192	185	157	43

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-22

South Coast Air Basin

Riverside County: Riverside - Rubidoux

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.87	2.54	1.86	2.19	2.08	0.89	1.84			1.36	1.49	1.58	1.66	1.66	1.59	1.7
	Health Risk	9	12	9	11	10	4	9			7	7	8	8	8	8	8
Benzene	Annual Avg	2.55	2.22	1.9	1.77	2.01	1.45	1.03			0.87	0.85	0.685		0.623	0.526	0.505
	Health Risk	236	206	176	164	186	134	95			80	79	63		58	49	47
1,3-Butadiene	Annual Avg	0.34	0.312	0.292	0.379	0.363	0.332	0.267			0.208	0.193	0.175		0.118	0.121	0.112
	Health Risk	128	117	110	143	136	125	100			78	72	66		44	45	42
Carbon Tetrachloride	Annual Avg	0.131	0.136				0.102	0.079				0.096	0.086		0.093		
	Health Risk	34	36				27	21				25	23		24		
Chromium, Hexavalent	Annual Avg			0.33	0.33	0.36	0.38	0.22			0.19	0.35		0.41	0.348		
	Health Risk			50	50	55	56	33			29	52		62	52		
para-Dichlorobenzene	Annual Avg		0.13	0.13	0.16	0.12	0.17	0.11				0.14	0.15		0.17	0.16	0.15
	Health Risk		9	8	10	8	11	7				9	10		12	11	10
Formaldehyde	Annual Avg	1.75	2.7	1.53	2.73	2.5	2.65	4.15			3.55	3.17	4.73	4.36	4.18	3.46	3.47
	Health Risk	13	20	11	20	18	19	31			26	23	35	32	31	25	26
Methylene Chloride	Annual Avg		0.69	0.6	1.1	0.93	0.98	0.83			0.58	0.69	0.44		0.45	0.29	0.3
	Health Risk		2	2	4	3	3	3			2	2	2		2	1	1
Perchloroethylene	Annual Avg	0.237	0.276	0.201	0.198	0.191	0.177	0.175				0.129	0.112		0.06	0.051	0.046
	Health Risk	9	11	8	8	8	7	7				5	4		2	2	2
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		429	413	374	410	424	386	306			222	274	211	102	233	141	136

1 Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-23

South Coast Air Basin

San Bernardino County: Fontana - Arrow Highway

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg																
	Health Risk																
Benzene	Annual Avg									0.98							
	Health Risk									91							
1,3-Butadiene	Annual Avg									0.244							
	Health Risk									92							
Carbon Tetrachloride	Annual Avg									0.114							
	Health Risk									30							
Chromium, Hexavalent	Annual Avg																
	Health Risk																
para-Dichlorobenzene	Annual Avg																
	Health Risk																
Formaldehyde	Annual Avg																
	Health Risk																
Methylene Chloride	Annual Avg									0.59							
	Health Risk									2							
Perchloroethylene	Annual Avg									0.179							
	Health Risk									7							
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk										222							

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-24

South Coast Air Basin

San Bernardino County: Upland - San Bernardino Road

TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
		Annual Average Concentrations and Health Risks															
Acetaldehyde	Annual Avg	2.12	3.28	2.36	2.84	2.42	1.09	2.13									
	Health Risk	10	16	11	14	12	5	10									
Benzene	Annual Avg	2.73	2.7	2.14	1.92	2.15	1.62	1.11	1.11								
	Health Risk	253	250	198	178	199	150	103	103								
1,3-Butadiene	Annual Avg	0.348	0.341	0.308	0.391	0.336	0.312	0.257	0.254								
	Health Risk	131	128	116	147	126	117	97	95								
Carbon Tetrachloride	Annual Avg	0.133	0.137		0.103		0.1	0.075									
	Health Risk	35	36		27		26	20									
Chromium, Hexavalent	Annual Avg			0.22	0.16	0.16	0.2	0.12									
	Health Risk			33	24	24	30	17									
para-Dichlorobenzene	Annual Avg		0.13	0.14	0.14	0.1	0.13	0.1	0.14								
	Health Risk		9	9	9	7	9	7	9								
Formaldehyde	Annual Avg	2.35	3.34	1.98	3.25	2.67	3.21	5.2									
	Health Risk	17	25	15	24	20	24	38									
Methylene Chloride	Annual Avg	1.41	1.59	0.82	0.87	0.72	1.13	0.66	1.7								
	Health Risk	5	6	3	3	3	4	2	6								
Perchloroethylene	Annual Avg	0.423	0.717	0.364	0.398	0.286	0.263	0.199	0.206								
	Health Risk	17	29	15	16	11	11	8	8								
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		468	499	400	442	402	376	302	221								

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-25

San Francisco Bay Area Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.3	1.4	1.03	1.31	1.17	0.42	0.83	0.73	0.65	0.76	0.68	0.73	0.63	0.74	0.74	0.71
	Health Risk	6	7	5	6	6	2	4	4	3	4	3	4	3	4	4	3
Benzene	Annual Avg	2.18	1.82	1.49	1.49	1.4	1.26	0.71	0.61	0.71	0.6	0.56	0.425	0.454	0.439	0.372	0.314
	Health Risk	202	169	138	138	129	116	66	56	66	55	52	39	42	41	34	29
1,3-Butadiene	Annual Avg	0.359	0.287	0.275	0.367	0.287	0.277	0.218	0.187	0.217	0.17	0.149	0.133	0.137	0.098	0.09	0.075
	Health Risk	135	108	103	138	108	104	82	70	82	64	56	50	51	37	34	28
Carbon Tetrachloride	Annual Avg	0.128	0.125		0.108		0.1	0.078				0.094	0.087	0.089	0.095		
	Health Risk	34	33		29		26	21				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.23	0.2	0.19	0.25	0.13	0.12	0.1	0.1	0.12		0.074	0.096	0.091	0.082
	Health Risk			34	29	29	37	19	17	15	15	18		11	14	14	12
para-Dichlorobenzene	Annual Avg		0.12	0.12	0.12	0.11	0.13	0.14	0.12			0.11	0.14	0.15	0.15	0.17	0.15
	Health Risk		8	8	8	7	8	9	8			7	9	10	10	11	10
Formaldehyde	Annual Avg	1.87	1.73	1.43	1.56	1.66	2.06	2.62	1.85	1.76	2.09	1.77	2.32	2.57	2.22	1.71	1.32
	Health Risk	14	13	11	11	12	15	19	14	13	15	13	17	19	16	13	10
Methylene Chloride	Annual Avg	1.04	2.32	0.65	0.72	0.59	0.6	0.58	0.55			0.53	0.27	0.22	0.22	0.14	0.13
	Health Risk	4	8	2	2	2	2	2	2			2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.204	0.232	0.169	0.128	0.082	0.094	0.067	0.071			0.078	0.059	0.052	0.039	0.035	0.029
	Health Risk	8	9	7	5	3	4	3	3			3	2	2	2	1	1
Diesel PM[3]	*Annual Avg*	*(2.5)*					*(1.9)*					*(1.6)*					
	Health Risk	*(750)*					*(570)*					*(480)*					
Average Basin Risk	w/o Diesel PM	403	355	308	366	296	314	225	174	179	153	179	144	162	149	111	93
	w/ Diesel PM	***(1153)***					***(884)***					***(659)***					

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-26

San Francisco Bay Area Air Basin

Alameda County: Fremont - Chapel Way

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.28	1.6	1.02	1.28	1.23	0.35	0.88	0.65	0.72					0.69	0.69	0.71
	Health Risk	6	8	5	6	6	2	4	3	4					3	3	3
Benzene	Annual Avg	1.92	1.67	1.21	1.35	1.25	1.24	0.58		0.76	0.61	0.53	0.439	0.418	0.356	0.286	
	Health Risk	178	155	112	125	116	115	54		71	57	49	41	39	33	26	
1,3-Butadiene	Annual Avg	0.283	0.259	0.193	0.321	0.252	0.27	0.199		0.238	0.176	0.136	0.132	0.116	0.078	0.049	
	Health Risk	106	97	72	120	95	101	75		90	66	51	50	43	29	19	
Carbon Tetrachloride	Annual Avg	0.131	0.127		0.105		0.101	0.076				0.095	0.085	0.089	0.096		
	Health Risk	35	34		28		27	20				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.2	0.19	0.21	0.2	0.11		0.1	0.1	0.1			0.045	0.053	0.05
	Health Risk			30	28	32	30	16		15	15	16			7	8	8
para-Dichlorobenzene	Annual Avg			0.11	0.11	0.1	0.12	0.1				0.1	0.13	0.15	0.16	0.15	
	Health Risk			7	7	7	8	7				7	9	10	11	10	
Formaldehyde	Annual Avg	1.84	1.98	1.3	1.37	1.78	2.02	2.16	1.79	1.96					2.15	1.46	1.21
	Health Risk	14	15	10	10	13	15	16	13	14					16	11	9
Methylene Chloride	Annual Avg	0.76	0.58	0.52	0.83	0.5	0.62	0.5				0.5	0.28	0.23	0.3	0.1	
	Health Risk	3	2	2	3	2	2	2				2	1	<1	1	<1	
Perchloroethylene	Annual Avg	0.189	0.21	0.134	0.114	0.086	0.118	0.069				0.083	0.056	0.05	0.039	0.029	
	Health Risk	8	8	5	5	3	5	3				3	2	2	2	1	
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		350	319	243	332	274	305	197	16	194	138	153	126	118	127	78	20

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-27

San Francisco Bay Area Air Basin

Contra Costa County: Concord - 2975 Treat Boulevard

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.41			1.39	1.46	0.62	0.86	0.76		0.87						
	Health Risk	7			7	7	3	4	4		4						
Benzene	Annual Avg	1.84	1.58	1.41	1.13	1.08	1.09	0.48	0.56	0.57	0.57						
	Health Risk	171	147	130	105	100	101	44	52	53	53						
1,3-Butadiene	Annual Avg	0.315	0.265	0.253	0.305	0.232	0.242	0.149	0.176	0.192	0.155						
	Health Risk	118	100	95	114	87	91	56	66	72	58						
Carbon Tetrachloride	Annual Avg	0.13	0.125		0.108		0.102	0.082									
	Health Risk	34	33		29		27	22									
Chromium, Hexavalent	Annual Avg				0.19	0.18	0.21	0.11	0.11		0.1						
	Health Risk				28	27	32	16	17		15						
para-Dichlorobenzene	Annual Avg			0.15	0.13	0.14	0.13	0.13	0.14								
	Health Risk			10	8	9	9	8	9								
Formaldehyde	Annual Avg	1.99			1.99	1.69	2.21	2.3	2.05		2.64						
	Health Risk	15			15	12	16	17	15		19						
Methylene Chloride	Annual Avg	0.67	0.51	0.66	0.54	0.54	0.55	0.55	0.5								
	Health Risk	2	2	2	2	2	2	2	2								
Perchloroethylene	Annual Avg	0.337	0.419	0.39	0.204	0.098	0.147	0.082	0.102								
	Health Risk	13	17	16	8	4	6	3	4								
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		360	299	253	316	248	287	172	169	125	149						

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-28

San Francisco Bay Area Air Basin

Contra Costa County: Richmond - 13th Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg			0.78		0.92	0.36	0.59									
	Health Risk			4		4	2	3									
Benzene	Annual Avg		1.92	1.54	1.76	1.7	1.44	1									
	Health Risk		177	143	163	157	133	92									
1,3-Butadiene	Annual Avg		0.272	0.26	0.393	0.308	0.3	0.251									
	Health Risk		102	98	148	116	113	94									
Carbon Tetrachloride	Annual Avg		0.123		0.11		0.097	0.078									
	Health Risk		33		29		25	21									
Chromium, Hexavalent	Annual Avg			0.19		0.15	0.26	0.13									
	Health Risk			28		23	39	19									
para-Dichlorobenzene	Annual Avg		0.14	0.12	0.12	0.1	0.12	0.19									
	Health Risk		9	8	8	7	8	13									
Formaldehyde	Annual Avg			1.08		1.32	2.22	4.27									
	Health Risk			8		10	16	31									
Methylene Chloride	Annual Avg		0.62	0.54	0.67	0.5	0.54	0.65									
	Health Risk		2	2	2	2	2	2									
Perchloroethylene	Annual Avg		0.147	0.093	0.092	0.056	0.043	0.03									
	Health Risk		6	4	4	2	2	1									
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk			329	295	354	321	340	276									

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-29

San Francisco Bay Area Air Basin

Contra Costa County: San Pablo - El Portal

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg										0.55						
	Health Risk										3						
Benzene	Annual Avg									0.56	0.42						
	Health Risk									52	39						
1,3-Butadiene	Annual Avg									0.148	0.118						
	Health Risk									56	45						
Carbon Tetrachloride	Annual Avg																
	Health Risk																
Chromium, Hexavalent	Annual Avg										0.1						
	Health Risk										15						
para-Dichlorobenzene	Annual Avg																
	Health Risk																
Formaldehyde	Annual Avg										1.24						
	Health Risk										9						
Methylene Chloride	Annual Avg																
	Health Risk																
Perchloroethylene	Annual Avg																
	Health Risk																
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk										108	111						

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-30

San Francisco Bay Area Air Basin

San Francisco County: San Francisco - Arkansas Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.32				0.98	0.4		0.75	0.54			0.57	0.54	0.68	0.69	0.65
	Health Risk	6				5	2		4	3			3	3	3	3	3
Benzene	Annual Avg		1.49	1.25		1.07	0.95	0.53	0.51	0.63	0.65	0.48	0.376		0.386	0.329	0.23
	Health Risk		138	116		99	88	49	48	59	61	45	35		36	30	21
1,3-Butadiene	Annual Avg		0.252	0.234		0.259	0.226	0.181	0.165	0.215	0.173	0.128	0.113		0.084	0.083	0.053
	Health Risk		95	88		97	85	68	62	81	65	48	42		32	31	20
Carbon Tetrachloride	Annual Avg		0.124				0.1	0.078				0.095	0.087		0.094		
	Health Risk		33				26	21				25	23		25		
Chromium, Hexavalent	Annual Avg				0.19	0.18	0.25	0.12	0.13	0.1		0.12		0.088	0.145	0.13	0.11
	Health Risk				29	26	37	18	19	15		18		13	22	20	17
para-Dichlorobenzene	Annual Avg		0.15	0.13		0.1	0.15	0.12	0.12			0.11	0.14		0.15	0.19	0.15
	Health Risk		10	9		7	10	8	8			7	9		10	13	10
Formaldehyde	Annual Avg	1.71				1.33	1.58		1.62	1.45			1.51	2.03	1.71	1.54	1.04
	Health Risk	13				10	12		12	11			11	15	13	11	8
Methylene Chloride	Annual Avg		3.22	0.88		0.6	0.63	0.66	0.5			0.6	0.26		0.17	0.17	0.12
	Health Risk		11	3		2	2	2	2			2	<1		<1	<1	<1
Perchloroethylene	Annual Avg		0.229	0.13		0.105	0.092	0.084	0.065			0.068	0.074		0.038	0.04	0.026
	Health Risk		9	5		4	4	3	3			3	3		1	2	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		19	296	221	29	250	266	169	158	169	126	148	126	31	142	110	80

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-31

San Francisco Bay Area Air Basin

Santa Clara County: San Jose - 4th Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.53	1.55	1.41	1.58	1.27	0.35	1.04	0.97	0.77	0.93	0.79	0.76				
	Health Risk	7	8	7	8	6	2	5	5	4	4	4	4				
Benzene	Annual Avg	3.02	2.44	2.03	1.89	1.88	1.55	0.97	0.93	1.04	0.73	0.7					
	Health Risk	280	226	188	175	174	144	89	86	97	68	65					
1,3-Butadiene	Annual Avg	0.549	0.385	0.436	0.485	0.385	0.348	0.311	0.287	0.293	0.227	0.193					
	Health Risk	207	145	164	182	145	131	117	108	110	85	72					
Carbon Tetrachloride	Annual Avg	0.127	0.128		0.107		0.102	0.077				0.095					
	Health Risk	33	34		28		27	20				25					
Chromium, Hexavalent	Annual Avg			0.29	0.25	0.25	0.33	0.17	0.13	0.11	0.1	0.13					
	Health Risk			43	37	38	49	25	20	17	15	19					
para-Dichlorobenzene	Annual Avg			0.12	0.12	0.1	0.12	0.14	0.12			0.12					
	Health Risk			8	8	7	8	10	8			8					
Formaldehyde	Annual Avg	2.27	2	2.09	1.83	2.16	2.28	2.7	2.56	2.24	2.69	2.24	2.27				
	Health Risk	17	15	15	13	16	17	20	19	16	20	16	17				
Methylene Chloride	Annual Avg	0.83	6.65	0.66	0.58	0.8	0.69	0.55	0.75			0.5					
	Health Risk	3	23	2	2	3	2	2	3			2					
Perchloroethylene	Annual Avg	0.161	0.153	0.1	0.094	0.064	0.069	0.068	0.096			0.088					
	Health Risk	6	6	4	4	3	3	3	4			4					
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		553	457	431	457	392	383	291	253	244	192	215	21				

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-32

San Francisco Bay Area Air Basin

Santa Clara County: San Jose - Jackson Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg														0.84	0.82	0.78
	Health Risk														4	4	4
Benzene	Annual Avg														0.577	0.502	0.414
	Health Risk														53	46	38
1,3-Butadiene	Annual Avg														0.131	0.137	0.104
	Health Risk														49	51	39
Carbon Tetrachloride	Annual Avg														0.096		
	Health Risk														25		
Chromium, Hexavalent	Annual Avg														0.098	0.1	
	Health Risk														15	15	
para-Dichlorobenzene	Annual Avg														0.15	0.15	0.15
	Health Risk														10	10	10
Formaldehyde	Annual Avg														2.79	2.13	1.71
	Health Risk														21	16	13
Methylene Chloride	Annual Avg														0.19	0.16	0.13
	Health Risk														<1	<1	<1
Perchloroethylene	Annual Avg														0.04	0.037	0.032
	Health Risk														2	1	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk															179	143	105

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-33

San Joaquin Valley Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.94	1.84	1.38	1.73	1.29	0.54	1.28	1.19	1.3	1.56	1.09	1.15	1.24	1.34	1.14	1.42
	Health Risk	9	9	7	8	6	3	6	6	6	8	5	6	6	7	6	7
Benzene	Annual Avg	2.45	2.11	1.36	1.32	1.33	1.16	0.73	0.71	0.76	0.69	0.63	0.538	0.552	0.463	0.372	0.374
	Health Risk	227	196	126	122	123	107	68	66	71	64	58	50	51	43	34	35
1,3-Butadiene	Annual Avg	0.409	0.36	0.236	0.339	0.323	0.264	0.222	0.195	0.233	0.177	0.158	0.15	0.146	0.095	0.08	0.082
	Health Risk	154	135	89	127	121	99	83	73	88	67	59	56	55	36	30	31
Carbon Tetrachloride	Annual Avg	0.128	0.129		0.109		0.098	0.077		0.114		0.096	0.086	0.091	0.097		
	Health Risk	34	34		29		26	20		30		25	23	24	26		
Chromium, Hexavalent	Annual Avg			0.23	0.21	0.19	0.28	0.13	0.11	0.1	0.1	0.12		0.086	0.078	0.083	0.076
	Health Risk			34	31	29	42	20	16	15	15	18		13	12	13	11
para-Dichlorobenzene	Annual Avg		0.11	0.11	0.13	0.11	0.11	0.1	0.13			0.11	0.13	0.15	0.15	0.15	0.15
	Health Risk		7	7	9	7	8	7	9			7	9	10	10	10	10
Formaldehyde	Annual Avg	2.45	1.81	1.46	1.67	1.8	2.1	2.96	2.77	2.86	3.44	2.61	3.08	3.13	3.02	2.27	2.52
	Health Risk	18	13	11	12	13	15	22	20	21	25	19	23	23	22	17	19
Methylene Chloride	Annual Avg	0.76	0.59	0.55	0.76	0.59	0.61	0.54	0.53	0.52	0.5	0.53	0.27	0.16	0.14	0.11	0.12
	Health Risk	3	2	2	3	2	2	2	2	2	2	2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.126	0.133	0.104	0.473	0.067	0.068	0.068	0.056	0.039		0.076	0.052	0.039	0.033	0.027	0.032
	Health Risk	5	5	4	19	3	3	3	2	2		3	2	2	1	1	1
Diesel PM[3]	*Annual Avg*	*(2.6)*					*(1.7)*					*(1.3)*					
	Health Risk	*(780)*					*(510)*					*(390)*					
Average Basin Risk	w/o Diesel PM	450	401	280	360	304	305	231	194	235	181	196	169	184	157	111	114
	w/ Diesel PM	***(1230)***					***(815)***					***(586)***					

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-34

San Joaquin Valley Air Basin

Kern County: Bakersfield - Chester Avenue

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.87	1.83	1.6	2												
	Health Risk	9	9	8	10												
Benzene	Annual Avg	2.68	2.22	1.54	1.47												
	Health Risk	248	205	143	136												
1,3-Butadiene	Annual Avg	0.389	0.306	0.24	0.327												
	Health Risk	146	115	90	123												
Carbon Tetrachloride	Annual Avg	0.127	0.125		0.104												
	Health Risk	33	33		27												
Chromium, Hexavalent	Annual Avg			0.21	0.21												
	Health Risk			31	31												
para-Dichlorobenzene	Annual Avg			0.12	0.17												
	Health Risk			8	11												
Formaldehyde	Annual Avg	2.44	1.62	1.36	1.85												
	Health Risk	18	12	10	14												
Methylene Chloride	Annual Avg	0.92	0.65	0.52	0.99												
	Health Risk	3	2	2	3												
Perchloroethylene	Annual Avg	0.087	0.127	0.075	1.48												
	Health Risk	3	5	3	59												
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		460	381	295	414												

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-35

San Joaquin Valley Air Basin

Kern County: Bakersfield - 5558 California Avenue

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg						0.49	1.59	1.22	1.27	1.69	1.19	1.27	1.37	1.51		1.65
	Health Risk						2	8	6	6	8	6	6	7	7		8
Benzene	Annual Avg						1.14	0.78	0.57	0.7	0.71	0.58	0.549	0.506	0.405		0.355
	Health Risk						106	72	53	65	66	54	51	47	37		33
1,3-Butadiene	Annual Avg						0.206	0.211	0.16	0.2	0.153	0.126	0.138	0.099	0.063		0.062
	Health Risk						78	79	60	75	58	47	52	37	24		23
Carbon Tetrachloride	Annual Avg						0.099	0.079				0.094	0.086	0.092	0.095		
	Health Risk						26	21				25	23	24	25		
Chromium, Hexavalent	Annual Avg						0.26	0.13	0.1	0.1	0.1	0.1		0.078	0.053		0.045
	Health Risk						39	19	15	15	16	16		12	8		7
para-Dichlorobenzene	Annual Avg						0.11	0.11	0.12			0.11	0.13	0.15	0.15		0.15
	Health Risk						7	7	8			7	9	10	10		10
Formaldehyde	Annual Avg						1.92	3.48	3.12	2.99	3.67	2.79	3.44	3.15	3.43		2.61
	Health Risk						14	26	23	22	27	21	25	23	25		19
Methylene Chloride	Annual Avg						0.54	0.64	0.5		0.5	0.58	0.26	0.1	0.11		0.09
	Health Risk						2	2	2		2	2	<1	<1	<1		<1
Perchloroethylene	Annual Avg						0.092	0.119	0.039			0.065	0.058	0.047	0.037		0.043
	Health Risk						4	5	2			3	2	2	1		2
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk							278	239	169	183	177	181	168	162	137		102

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-36

San Joaquin Valley Air Basin

Fresno County: Fresno - 1st Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg		2.29		1.89	1.4	0.67			1.5		1.43	1.6	1.55	1.71	1.27	1.63
	Health Risk		11		9	7	3			7		7	8	8	8	6	8
Benzene	Annual Avg		2.42	1.34	1.35	1.44	1.24	0.79	1	0.83	0.8	0.73	0.61	0.631	0.546	0.403	0.408
	Health Risk		224	124	125	133	115	73	92	76	74	68	56	58	51	37	38
1,3-Butadiene	Annual Avg		0.459	0.262	0.342	0.356	0.3	0.234	0.233	0.265	0.214	0.195	0.182	0.194	0.127	0.098	0.101
	Health Risk		173	99	129	134	113	88	87	100	80	73	68	73	48	37	38
Carbon Tetrachloride	Annual Avg		0.122		0.108		0.099	0.078				0.095	0.086	0.089	0.097		
	Health Risk		32		28		26	21				25	23	23	26		
Chromium, Hexavalent	Annual Avg			0.21	0.15	0.14	0.22	0.1	0.11	0.1	0.1	0.13		0.058	0.05	0.073	0.063
	Health Risk			31	22	21	33	16	16	15	15	20		9	8	11	9
para-Dichlorobenzene	Annual Avg			0.1	0.1	0.14	0.13	0.11	0.14			0.1	0.14	0.15	0.15	0.15	0.15
	Health Risk			7	7	9	8	7	9			7	9	10	10	10	10
Formaldehyde	Annual Avg		2.32		1.64	2.01	2.41			3.42		3.56	4.32	4.16	3.72	2.57	3
	Health Risk		17		12	15	18			25		26	32	31	27	19	22
Methylene Chloride	Annual Avg		0.62	0.54	0.69	0.59	0.58	0.5	0.52			0.5	0.27	0.24	0.15	0.14	0.15
	Health Risk		2	2	2	2	2	2	2			2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg		0.142	0.102	0.1	0.062	0.065	0.041	0.043			0.056	0.046	0.034	0.031	0.023	0.028
	Health Risk		6	4	4	2	3	2	2			2	2	1	1	<1	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk			465	267	338	323	321	209	208	223	169	230	198	213	179	120	126

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-37

San Joaquin Valley Air Basin

Stanislaus County: Modesto - I Street (Courthouse)

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg		1.51	1.37	1.75	1.44	0.51	1.17	1.25								
	Health Risk		7	7	8	7	2	6	6								
Benzene	Annual Avg																
	Health Risk																
1,3-Butadiene	Annual Avg																
	Health Risk																
Carbon Tetrachloride	Annual Avg																
	Health Risk																
Chromium, Hexavalent	Annual Avg			0.27	0.23	0.22	0.32	0.16	0.11								
	Health Risk			40	34	33	48	25	17								
para-Dichlorobenzene	Annual Avg																
	Health Risk																
Formaldehyde	Annual Avg		1.43	1.32	1.82	1.86	2.16	2.58	2.43								
	Health Risk		11	10	13	14	16	19	18								
Methylene Chloride	Annual Avg																
	Health Risk																
Perchloroethylene	Annual Avg																
	Health Risk																
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk			18	57	55	54	66	50	41								

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-38

San Joaquin Valley Air Basin

Stanislaus County: Modesto - 14th Street

TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
		Annual Average Concentrations and Health Risks															
Acetaldehyde	Annual Avg										1.65						
	Health Risk										8						
Benzene	Annual Avg	2.25	1.86	1.2	1.23	1.14	1.2	0.7	0.77	0.85	0.61						
	Health Risk	208	172	111	114	105	111	65	71	78	56						
1,3-Butadiene	Annual Avg	0.379	0.353	0.224	0.348	0.293	0.298	0.236	0.208	0.26	0.162						
	Health Risk	142	133	84	131	110	112	89	78	98	61						
Carbon Tetrachloride	Annual Avg	0.128	0.132		0.112		0.094	0.074		0.113							
	Health Risk	34	35		30		25	20		30							
Chromium, Hexavalent	Annual Avg										0.1						
	Health Risk										15						
para-Dichlorobenzene	Annual Avg		0.11	0.1	0.12	0.1	0.11	0.1	0.15								
	Health Risk		7	7	8	7	7	7	10								
Formaldehyde	Annual Avg										3.09						
	Health Risk										23						
Methylene Chloride	Annual Avg	0.65	0.61	0.55	0.65	0.62	0.58	0.5	0.59	0.51							
	Health Risk	2	2	2	2	2	2	2	2	2							
Perchloroethylene	Annual Avg	0.145	0.15	0.118	0.109	0.087	0.053	0.044	0.052	0.035							
	Health Risk	6	6	5	4	3	2	2	2	1							
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		392	355	209	289	227	259	185	163	209	163						

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-39

San Joaquin Valley Air Basin

San Joaquin County: Stockton - Hazelton Street

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.47	1.75	1.07	1.31	1.1		0.9	0.9	1	1.07	0.64	0.59	0.8	0.81	0.87	0.99
	Health Risk	7	9	5	6	5		4	4	5	5	3	3	4	4	4	5
Benzene	Annual Avg	2.01	1.95	1.37		1.23	1.05	0.64	0.52	0.69	0.65	0.58	0.454	0.521	0.437	0.37	0.358
	Health Risk	186	181	127		113	97	60	48	64	60	54	42	48	40	34	33
1,3-Butadiene	Annual Avg	0.336	0.321	0.217		0.281	0.25	0.206	0.181	0.206	0.18	0.155	0.13	0.146	0.096	0.079	0.085
	Health Risk	126	121	82		106	94	77	68	77	68	58	49	55	36	30	32
Carbon Tetrachloride	Annual Avg	0.131	0.136				0.099	0.077		0.115		0.098	0.087	0.091	0.098		
	Health Risk	35	36				26	20		30		26	23	24	26		
Chromium, Hexavalent	Annual Avg			0.22	0.25	0.25		0.14			0.1	0.12		0.123	0.13	0.123	0.12
	Health Risk			33	37	37		21			15	18		18	20	18	18
para-Dichlorobenzene	Annual Avg		0.1	0.1		0.1	0.11	0.1	0.11			0.11	0.13	0.15	0.15	0.15	0.15
	Health Risk		7	7		7	7	7	7			7	9	10	10	10	10
Formaldehyde	Annual Avg	1.81	1.88	1.24	1.38	1.56		2.35	2.24	2.33	2.68	1.61	1.48	2.07	1.91	1.79	1.94
	Health Risk	13	14	9	10	12		17	16	17	20	12	11	15	14	13	14
Methylene Chloride	Annual Avg	0.63	0.5	0.6		0.5	0.75	0.53	0.5	0.5	0.5	0.53	0.27	0.14	0.16	0.12	0.12
	Health Risk	2	2	2		2	3	2	2	2	2	2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.129	0.113	0.12		0.066	0.061	0.068	0.09	0.033		0.108	0.053	0.035	0.03	0.022	0.024
	Health Risk	5	5	5		3	2	3	4	1		4	2	1	1	<1	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		374	375	270	53	285	229	211	149	196	170	184	139	175	151	109	113

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-40

San Diego Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.33	1.5	1.22	1.41	1.48	0.64	1.03	1	0.86	1.04	0.84	0.95	0.97	0.89	0.89	1.01
	Health Risk	6	7	6	7	7	3	5	5	4	5	4	5	5	4	4	5
Benzene	Annual Avg	2.25	1.7	1.48	1.16	1.39	0.98	0.76	0.76	0.76	0.86	0.65	0.505	0.491	0.483	0.371	0.404
	Health Risk	208	158	137	107	129	90	71	70	70	79	60	47	45	45	34	37
1,3-Butadiene	Annual Avg	0.333	0.257	0.258	0.312	0.307	0.242	0.208	0.198	0.196	0.22	0.159	0.136	0.12	0.089	0.074	0.073
	Health Risk	125	97	97	117	115	91	78	75	74	83	60	51	45	33	28	27
Carbon Tetrachloride	Annual Avg	0.132	0.127		0.103		0.099	0.077				0.094	0.086	0.092	0.093		
	Health Risk	35	34		27		26	20				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.24	0.19	0.16	0.18	0.11	0.11	0.1	0.1	0.1		0.045	0.05	0.03	0.043
	Health Risk			36	28	23	27	16	16	15	15	15		7	8	5	6
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.15	0.12	0.11	0.13				0.15	0.15	0.15	0.15	0.15
	Health Risk		7	8	8	10	8	7	8				10	10	10	10	10
Formaldehyde	Annual Avg	1.64	1.53	1.26	1.76	2.25	2.13	2.62	2.62	2.27	2.67	2.23	2.59	2.99	2.68	2.19	2.42
	Health Risk	12	11	9	13	17	16	19	19	17	20	16	19	22	20	16	18
Methylene Chloride	Annual Avg	0.59	0.83	1.34	1.13	0.73	0.63	0.59	0.57		0.53	0.76	0.17	0.16	0.16	0.13	0.14
	Health Risk	2	3	5	4	3	2	2	2		2	3	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.282	0.269	0.263	0.2	0.207	0.249	0.147	0.125			0.089	0.061	0.06	0.047	0.037	0.041
	Health Risk	11	11	11	8	8	10	6	5			4	2	2	2	1	2
Diesel PM[3]	*Annual Avg*	*(2.9)*					*(1.9)*					*(1.4)*					
	Health Risk	*(870)*					*(570)*					*(420)*					
Average Basin Risk	w/o Diesel PM	399	328	309	319	312	273	224	200	180	204	187	157	160	147	98	105
	w/ Diesel PM	***(1269)***					***(843)***					***(607)***					

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-41

San Diego Air Basin

San Diego County: Chula Vista

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.1	1.21	0.99	1.16	1.32	0.64	0.83	0.91	0.7	0.91	0.75	0.78	0.75	0.72	0.74	0.86
	Health Risk	5	6	5	6	6	3	4	4	3	4	4	4	4	3	4	4
Benzene	Annual Avg	2	1.21	1.03	0.8	1.08	0.81		0.63	0.61		0.55	0.421	0.419		0.341	0.358
	Health Risk	186	112	95	74	100	75		58	56		51	39	39		32	33
1,3-Butadiene	Annual Avg	0.278	0.183	0.184	0.225	0.262	0.205		0.162	0.153		0.136	0.11	0.107		0.07	0.064
	Health Risk	105	69	69	85	98	77		61	57		51	41	40		26	24
Carbon Tetrachloride	Annual Avg	0.132	0.129		0.101		0.097					0.093	0.086	0.091			
	Health Risk	35	34		27		26					25	23	24			
Chromium, Hexavalent	Annual Avg			0.24	0.2	0.17	0.2	0.11	0.1	0.1	0.11	0.1		0.05	0.063	0.03	0.038
	Health Risk			37	30	25	29	16	15	15	16	16		8	9	5	6
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.12	0.11		0.13				0.15	0.15		0.15	0.15
	Health Risk		7	7	8	8	7		8				10	10		10	10
Formaldehyde	Annual Avg	1.26	1.3	1.1	1.46	2.08	1.81	2.1	2.37	2	2.49	2.14	2.54	2.56	2.3	1.93	2.08
	Health Risk	9	10	8	11	15	13	15	17	15	18	16	19	19	17	14	15
Methylene Chloride	Annual Avg	0.58	0.59	0.81	1.01	0.57	0.57		0.62			0.65	0.16	0.13		0.12	0.13
	Health Risk	2	2	3	3	2	2		2			2	<1	<1		<1	<1
Perchloroethylene	Annual Avg	0.236	0.229	0.208	0.144	0.132	0.146		0.103			0.078	0.057	0.048		0.031	0.036
	Health Risk	9	9	8	6	5	6		4			3	2	2		1	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		351	249	232	250	259	238	35	169	146	38	168	138	146	29	92	93

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-42

San Diego Air Basin

San Diego County: El Cajon - Redwood Avenue

Annual Average Concentrations and Health Risks																	
TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Acetaldehyde	Annual Avg	1.56	1.78	1.46	1.66			1.23			1.17	0.92	1.11	1.2	1.06	1.04	1.16
	Health Risk	8	9	7	8			6			6	4	5	6	5	5	6
Benzene	Annual Avg	2.5	2.2	1.94	1.51		1.14	0.86	0.89	0.91	0.98	0.74	0.588	0.563	0.561	0.402	0.449
	Health Risk	231	203	179	140		106	79	82	84	91	69	54	52	52	37	42
1,3-Butadiene	Annual Avg	0.387	0.332	0.331	0.398		0.279	0.252	0.235	0.24	0.24	0.182	0.162	0.133	0.101	0.077	0.082
	Health Risk	145	125	125	150		105	95	88	90	90	68	61	50	38	29	31
Carbon Tetrachloride	Annual Avg	0.131	0.125				0.1	0.078				0.095	0.086	0.093	0.093		
	Health Risk	35	33				27	21				25	23	24	24		
Chromium, Hexavalent	Annual Avg			0.24	0.18			0.1	0.11		0.1	0.1		0.04	0.038		0.048
	Health Risk			36	26			16	17		15	15		6	6		7
para-Dichlorobenzene	Annual Avg			0.12	0.13		0.12	0.11	0.13				0.15	0.15	0.15	0.15	0.15
	Health Risk			8	8		8	7	8				10	10	10	10	10
Formaldehyde	Annual Avg	2.01	1.76	1.42	2.06			3.14			2.84	2.32	2.63	3.41	3.05	2.45	2.76
	Health Risk	15	13	10	15			23			21	17	19	25	22	18	20
Methylene Chloride	Annual Avg	0.59	1.07	1.87	1.25		0.7	0.61	0.52		0.52	0.87	0.19	0.18	0.18	0.14	0.14
	Health Risk	2	4	7	4		2	2	2		2	3	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.329	0.308	0.319	0.256		0.352	0.168	0.147			0.1	0.065	0.072	0.059	0.043	0.045
	Health Risk	13	12	13	10		14	7	6			4	3	3	2	2	2
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		449	399	385	361		262	256	203	174	225	205	175	176	159	101	118

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-43

Sacramento Valley Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg	1.29			1.37	1.04	0.39	1.03	1.05	0.92	1.23	0.83	0.74	1.14	1.04	1.09	1.15
	Health Risk	6			7	5	2	5	5	4	6	4	4	6	5	5	6
Benzene	Annual Avg	2.02	1.88	1.35	1	1.02	0.8	0.56	0.55	0.5	0.56	0.45	0.422	0.443	0.406	0.406	0.335
	Health Risk	187	174	125	92	95	74	51	51	47	52	42	39	41	38	38	31
1,3-Butadiene	Annual Avg	0.378	0.332	0.283	0.288	0.221	0.186	0.176	0.16	0.154	0.128	0.119	0.125	0.116	0.094	0.093	0.08
	Health Risk	142	125	106	108	83	70	66	60	58	48	45	47	44	35	35	30
Carbon Tetrachloride	Annual Avg	0.123	0.123		0.109		0.099	0.078				0.094	0.088	0.09	0.093		
	Health Risk	33	32		29		26	21				25	23	24	25		
Chromium, Hexavalent	Annual Avg			0.17	0.14	0.13	0.18	0.11	0.1	0.1	0.1	0.1	0.1	0.053	0.05	0.068	0.058
	Health Risk			26	21	19	26	16	15	15	15	15	15	8	8	10	9
para-Dichlorobenzene	Annual Avg			0.11	0.1	0.2	0.14	0.11	0.14			0.1	0.13	0.15	0.15	0.15	0.15
	Health Risk			7	7	14	9	7	10			7	9	10	10	10	10
Formaldehyde	Annual Avg	1.57			1.77	1.75	1.91	2.76	2.92	2.52	3.61	2.51	2.41	3.79	3.53	2.76	2.68
	Health Risk	12			13	13	14	20	22	19	27	18	18	28	26	20	20
Methylene Chloride	Annual Avg	0.65	0.56	0.55	0.98	0.66	0.53	0.54	0.52		0.6	0.57	0.29	0.08	0.08	0.07	0.08
	Health Risk	2	2	2	3	2	2	2	2		2	2	1	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.071	0.074	0.063	0.052	0.165	0.049	0.055	0.052			0.058	0.027	0.025	0.018	0.015	0.021
	Health Risk	3	3	3	2	7	2	2	2			2	1	1	<1	<1	<1
Diesel PM[3]	*Annual Avg*	*(2.5)*					*(1.6)*					*(1.2)*					
	Health Risk	*(750)*					*(480)*					*(360)*					
Average Basin Risk	w/o Diesel PM	385	336	269	282	238	225	190	167	143	150	160	157	162	147	118	106
	w/ Diesel PM	***(1153)***					***(705)***					***(520)***					

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-44

Sacramento Valley Air Basin

Butte County: Chico - Manzanita Avenue

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg				1.55	1.11	0.54	1.15	1.17	0.96	1.41	0.89	1.1	1.33	1.14	1.32	1.4
	Health Risk				8	5	3	6	6	5	7	4	5	6	6	6	7
Benzene	Annual Avg				1.1	1.14	0.85	0.67		0.55	0.64	0.52	0.499	0.544	0.449	0.533	0.427
	Health Risk				102	106	78	62		51	59	48	46	50	42	49	40
1,3-Butadiene	Annual Avg				0.295	0.249	0.205	0.216		0.17	0.149	0.142	0.157	0.154	0.111	0.132	0.108
	Health Risk				111	94	77	81		64	56	54	59	58	42	50	41
Carbon Tetrachloride	Annual Avg				0.108		0.1	0.079					0.088	0.087	0.093		
	Health Risk				29		26	21					23	23	24		
Chromium, Hexavalent	Annual Avg				0.15	0.13	0.16	0.1	0.1	0.1	0.1	0.1	0.1	0.058	0.048	0.075	0.058
	Health Risk				23	19	24	16	15	15	15	15	15	9	7	11	9
para-Dichlorobenzene	Annual Avg				0.1	0.13	0.1	0.12					0.13	0.15	0.15	0.15	0.15
	Health Risk				7	8	7	8					9	10	10	10	10
Formaldehyde	Annual Avg				2.08	1.78	2.04	2.99	3.42	2.63	4.15	2.76	3.25	4.47	3.82	3.4	3.28
	Health Risk				15	13	15	22	25	19	31	20	24	33	28	25	24
Methylene Chloride	Annual Avg				0.81	0.5	0.53	0.58					0.36	0.09	0.07	0.08	0.09
	Health Risk				3	2	2	2					1	<1	<1	<1	<1
Perchloroethylene	Annual Avg				0.057	0.265	0.047	0.049					0.024	0.024	0.015	0.014	0.028
	Health Risk				2	11	2	2					<1	1	<1	<1	1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk					300	258	234	220	46	154	168	141	182	190	159	151	132

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-45

Sacramento Valley Air Basin

Butte County: Chico - Salem Street

Annual Average Concentrations and Health Risks																	
TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Acetaldehyde	Annual Avg	1.27															
	Health Risk	6															
Benzene	Annual Avg	1.96	1.91														
	Health Risk	182	177														
1,3-Butadiene	Annual Avg	0.403	0.361														
	Health Risk	151	136														
Carbon Tetrachloride	Annual Avg	0.123	0.123														
	Health Risk	32	33														
Chromium, Hexavalent	Annual Avg																
	Health Risk																
para-Dichlorobenzene	Annual Avg																
	Health Risk																
Formaldehyde	Annual Avg	1.49															
	Health Risk	11															
Methylene Chloride	Annual Avg	0.53	0.57														
	Health Risk	2	2														
Perchloroethylene	Annual Avg	0.047	0.054														
	Health Risk	2	2														
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		386	350														

1 Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-46

Sacramento Valley Air Basin

Placer County: Roseville - North Sunrise Boulevard

Annual Average Concentrations and Health Risks																	
TAC	**Conc.[1]/Risk[2]**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Acetaldehyde	Annual Avg					0.96	0.25	0.9	0.93	0.88		0.77	0.39	0.95	0.93	0.87	0.89
	Health Risk					5	1	4	4	4		4	2	5	5	4	4
Benzene	Annual Avg					0.91	0.75	0.44	0.46	0.45	0.48	0.39	0.344	0.343	0.363	0.278	0.244
	Health Risk					84	70	40	42	42	44	36	32	32	34	26	23
1,3-Butadiene	Annual Avg					0.194	0.167	0.135	0.121	0.138	0.107	0.096	0.093	0.078	0.078	0.054	0.051
	Health Risk					73	63	51	46	52	40	36	35	29	29	20	19
Carbon Tetrachloride	Annual Avg						0.099	0.077				0.094	0.087	0.093	0.093		
	Health Risk						26	20				25	23	24	25		
Chromium, Hexavalent	Annual Avg					0.13	0.19	0.11	0.1	0.1	0.1	0.1		0.048	0.053	0.06	0.058
	Health Risk					19	29	16	15	15	15	15		7	8	9	9
para-Dichlorobenzene	Annual Avg					0.28	0.17	0.1	0.15			0.1	0.13	0.15	0.15	0.15	0.15
	Health Risk					19	11	7	10			7	9	10	10	10	10
Formaldehyde	Annual Avg					1.71	1.78	2.52	2.42	2.42		2.25	1.57	3.12	3.23	2.12	2.07
	Health Risk					13	13	19	18	18		17	12	23	24	16	15
Methylene Chloride	Annual Avg					0.82	0.54	0.5	0.5			0.52	0.23	0.08	0.09	0.06	0.08
	Health Risk					3	2	2	2			2	<1	<1	<1	<1	<1
Perchloroethylene	Annual Avg					0.065	0.051	0.061	0.063			0.047	0.031	0.026	0.022	0.016	0.014
	Health Risk					3	2	2	3			2	1	1	<1	<1	<1
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk						219	217	161	140	131	99	144	114	131	135	85	80

1 Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-47

Sacramento Valley Air Basin

Sacramento County: Citrus Heights - Sunrise Boulevard

Annual Average Concentrations and Health Risks																	
TAC	Conc.[1]/Risk[2]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Acetaldehyde	Annual Avg	1.32															
	Health Risk	6															
Benzene	Annual Avg	2.08	1.85	1.41													
	Health Risk	192	171	130													
1,3-Butadiene	Annual Avg	0.353	0.302	0.307													
	Health Risk	133	114	115													
Carbon Tetrachloride	Annual Avg	0.124	0.123														
	Health Risk	33	32														
Chromium, Hexavalent	Annual Avg																
	Health Risk																
para-Dichlorobenzene	Annual Avg			0.11													
	Health Risk			7													
Formaldehyde	Annual Avg	1.66															
	Health Risk	12															
Methylene Chloride	Annual Avg	0.76	0.54	0.5													
	Health Risk	3	2	2													
Perchloroethylene	Annual Avg	0.095	0.094	0.076													
	Health Risk	4	4	3													
Diesel PM	Annual Avg	No Monitoring Data Available															
	Health Risk																
Total Health Risk		383	323	257													

1 Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-48

APPENDIX D

Surface Area, Population, and

Average Daily Vehicle Miles Traveled

Appendix D: *Surface Area, Population, and Average Daily Vehicle Miles Traveled*

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Introduction

This appendix provides information on the square mile surface area, population, and average number of vehicle miles traveled (VMT) each day in California. The trend data for population and daily VMT cover the period 1980 through 2020. Data are listed for each air basin, for each county within each air basin, and for the State as a whole. In cases where a county is split between two or more air basins, the data reflect only that portion of the county within the respective air basin. It is important to note that the average daily VMT listed in the following tables has been divided by 1000.

Surface areas were calculated based on United States Census Bureau data from the 2000 Census. The surface areas shown reflect land portions of air basins only and exclude water bodies, including bays, lakes, and rivers.

The population data were derived from reports developed by the California Department of Finance (DOF), Demographic Research Unit. Split county fractions for 1990 and 2000 were derived using census 1990 and 2000 data. County and air basin fractions for years not listed above were interpolated. The population data do not reflect any adjustment for the estimated census undercount.

The estimates of daily VMT for the years 1980 through 2020 are found in ARB's revised motor vehicle emissions inventory model, EMFAC2007 (refer to www.arb.ca.gov/msei/msei.htm). The VMT estimates have been revised from those published in the last year's Almanac that were based on EMFAC2002 version 2.2. The current VMT estimates reflect changes in vehicle population, mileage accrual rates, and the data provided by regional transportation planning agencies (RTPAs). For future calendar years, the VMT estimates in large urbanized areas are provided by RTPAs as an output of their travel demand models. For recent years (2000-2005), the VMT is calculated as the product of vehicle population from Department of Motor Vehicles (DMV) data and mileage accrual rates (annual miles traveled by type and age of vehicle) calculated from the Bureau of Automotive Repair database for the Smog Check program. For historical years (pre-2000), the VMT is calculated as the product of vehicle population backcast from DMV data and mileage accrual rates. The changes made in EMFAC2007, including revised DMV data, revised accrual rates based on more current Smog Check data, redistribution of heavy-duty truck VMT based on survey data, and updated VMT data from RTPAs, combine to lower VMT in some regions and raise VMT in other regions. More detailed information about the methodologies used in developing both the population and VMT trends is available from the ARB staff at (916) 445-8699.

California

Surface Area = 155959 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	23782000	26402401	29828496	31711849	34098740	37004660	39246767	41549270	43851741
Avg. Daily VMT/1000	403567	538319	691048	733629	799848	955233	958078	1033400	1104522

Table D-1

Great Basin Valleys Air Basin

Surface Area = 13986 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	27700	27900	29370	30942	32332	33353	34478	35286	36093
Avg. Daily VMT/1000	914	987	1139	1085	1095	1370	1475	1694	1954

Table D-2

Alpine County
Surface Area = 739 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1100	1100	1094	1171	1205	1242	1377	1409	1441
Avg. Daily VMT/1000	30	32	40	41	45	57	59	68	79

Table D-3

Inyo County
Surface Area = 10203 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	17900	18000	18198	18371	18201	18599	18396	18400	18404
Avg. Daily VMT/1000	547	546	670	647	665	808	873	1001	1155

Table D-4

Mono County
Surface Area = 3044 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8700	8800	10078	11400	12926	13512	14705	15477	16248
Avg. Daily VMT/1000	337	409	429	397	385	505	543	625	720

Table D-5

Lake County Air Basin

Surface Area = 1258 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	36800	45600	50962	56630	58605	64180	69259	74468	79676
Avg. Daily VMT/1000	870	1151	1307	1496	1503	1819	2001	2324	2744

Table D-6

Lake Tahoe Air Basin

Surface Area = 224 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	36205	36237	39330	43690	46883	53586	58121	64309	70497
Avg. Daily VMT/1000	769	869	1000	1140	1161	1268	1404	1626	1896

Table D-7

El Dorado County
Surface Area = 157 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	27680	27520	29955	32837	34531	38235	41049	44623	48197
Avg. Daily VMT/1000	585	617	695	777	777	844	937	1090	1276

Table D-8 A portion of El Dorado County lies within the Mountain Counties Air Basin.

Placer County
Surface Area = 66 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8525	8717	9375	10853	12352	15351	17072	19686	22300
Avg. Daily VMT/1000	184	252	305	363	384	424	467	536	620

Table D-9 Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

Surface Area = 27287 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	357420	485698	676413	749355	822397	923323	975761	1034503	1093241
Avg. Daily VMT/1000	6745	11130	20896	22712	24999	34411	34880	40184	44740

Table D-10

Kern County
Surface Area = 3786 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	82560	96324	111407	115376	112781	130587	137093	149069	161044
Avg. Daily VMT/1000	1879	2677	3359	3662	4010	5149	5806	6866	7942

Table D-11 A portion of Kern County lies within the San Joaquin Valley Air Basin.

Los Angeles County
Surface Area = 1522 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	97504	160542	231253	262112	300762	321004	328476	335134	341792
Avg. Daily VMT/1000	1927	3082	5740	5527	5883	7981	8164	9531	10546

Table D-12 A portion of Los Angeles County lies within the South Coast Air Basin.

Riverside County
Surface Area = 3054 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	2545	3178	4515	6756	9354	11589	12991	14523	16054
Population	7904	9870	14022	15443	16526	20473	22951	25657	28362

Table D-13 Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

San Bernardino County
Surface Area = 18923 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	166907	215784	315216	349668	382974	439670	474250	510120	545989
Avg. Daily VMT/1000	2603	4938	10990	12648	14094	19895	19452	21983	24112

Table D-14 A portion of San Bernardino County lies within the South Coast Air Basin.

Mountain Counties Air Basin

Surface Area = 12226 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	229578	272823	346018	385722	411003	450949	477342	515267	553190
Avg. Daily VMT/1000	5967	7522	9662	10720	11055	13811	14805	16823	18982

Table D-15

Amador County
Surface Area = 593 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	19500	22200	30462	33395	35327	38221	39287	40772	42257
Avg. Daily VMT/1000	548	653	872	982	986	1225	1346	1545	1780

Table D-16

Calaveras County
Surface Area = 1020 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	20900	25000	32466	38352	40740	45711	49599	54645	59691
Avg. Daily VMT/1000	658	768	1049	1213	1221	1586	1755	2023	2335

Table D-17

El Dorado County
Surface Area = 1553 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	58820	71580	97350	112073	124012	137315	147422	160257	173092
Avg. Daily VMT/1000	1374	1815	2283	2733	2874	3706	3780	4156	4413

Table D-18

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mariposa County
Surface Area = 1451 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	11200	12500	14422	16450	16985	18281	18608	19608	20607
Avg. Daily VMT/1000	282	324	456	502	475	577	642	741	856

Table D-19

Nevada County
Surface Area = 958 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	52500	64700	79019	87059	92393	100227	106910	116911	126912
Avg. Daily VMT/1000	1442	1997	2402	2579	2666	3184	3429	3921	4522

Table D-20

Placer County
Surface Area = 908 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	11958	15143	20499	21790	22457	27908	31036	35789	40542
Avg. Daily VMT/1000	322	446	506	581	746	988	1034	1169	1251

Table D-21

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Plumas County
Surface Area = 2553 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	17400	18600	19779	20823	20713	21557	21067	21025	20983
Avg. Daily VMT/1000	327	362	489	528	562	682	757	875	1032

Table D-22

Sierra County
Surface Area = 953 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	3100	3200	3318	3560	3645	3514	3530	3592	3654
Avg. Daily VMT/1000	74	82	104	95	96	118	130	149	173

Table D-23

Tuolumne County
Surface Area = 2235 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	34200	39900	48703	52220	54731	58215	59883	62668	65452
Avg. Daily VMT/1000	940	1075	1501	1507	1429	1745	1932	2244	2620

Table D-24

North Central Coast Air Basin

Surface Area = 5156 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	506400	565800	623037	645899	714230	743389	787044	825998	864950
Avg. Daily VMT/1000	9864	13153	16546	16926	18206	20398	21330	22121	23017

Table D-25

Monterey County
Surface Area = 3321 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	292100	327400	356797	360350	403946	425055	453292	479326	505359
Avg. Daily VMT/1000	5764	7526	9445	9501	10475	11926	12245	12752	13339

Table D-26

San Benito County
Surface Area = 1389 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	25200	29900	36911	44347	53790	57700	62530	68039	73547
Avg. Daily VMT/1000	821	1105	1428	1607	1671	2025	2027	2136	2255

Table D-27

Santa Cruz County
Surface Area = 445 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	189100	208500	229329	241202	256494	260634	271222	278633	286044
Avg. Daily VMT/1000	3279	4522	5673	5818	6060	6447	7058	7233	7423

Table D-28

North Coast Air Basin

Surface Area = 12339 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	244387	258167	286742	303199	310977	325519	333829	346372	358913
Avg. Daily VMT/1000	5535	6305	8049	8159	8048	9264	10101	11513	13209

Table D-29

Del Norte County
Surface Area = 1008 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	18300	19100	24426	27862	27497	29355	29126	29946	30765
Avg. Daily VMT/1000	450	437	598	601	551	643	703	807	944

Table D-30

Humboldt County
Surface Area = 3572 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	108900	110600	119370	124979	126857	132434	133136	136327	139518
Avg. Daily VMT/1000	2365	2632	3325	3307	3241	3702	4017	4588	5360

Table D-31

Mendocino County
Surface Area = 3508 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	67000	73400	80574	83753	86555	90487	94300	97482	100664
Avg. Daily VMT/1000	1632	1875	2402	2473	2463	2867	3153	3653	4228

Table D-32

Sonoma County
Surface Area = 1071 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	38187	42267	49347	53128	57085	59218	63825	69195	74564
Avg. Daily VMT/1000	793	1042	1298	1379	1400	1582	1722	1879	1988

Table D-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Trinity County
Surface Area = 3179 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	12000	12800	13025	13477	12983	14025	13442	13422	13402
Avg. Daily VMT/1000	295	319	426	399	393	470	506	586	689

Table D-34

Northeast Plateau Air Basin

Surface Area = 14788 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	70500	75200	81007	83873	88038	91919	92112	92746	93379
Avg. Daily VMT/1000	1784	1973	2612	2794	2452	2991	3134	3571	4192

Table D-35

Lassen County
Surface Area = 4557 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	21800	24300	27693	28891	33977	35696	36954	37593	38232
Avg. Daily VMT/1000	415	462	613	715	697	820	907	1042	1223

Table D-36

Modoc County
Surface Area = 3944 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8700	9400	9685	9983	9570	9813	9547	9416	9285
Avg. Daily VMT/1000	172	179	217	234	219	257	283	325	381

Table D-37

Siskiyou County
Surface Area = 6287 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	40000	41500	43629	44999	44491	46410	45611	45737	45862
Avg. Daily VMT/1000	1197	1332	1782	1845	1536	1914	1944	2204	2588

Table D-38

Sacramento Valley Air Basin

Surface Area = 14994 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1500924	1688217	1977544	2155490	2353225	2636019	2925202	3259235	3593262
Avg. Daily VMT/1000	30025	38728	50471	54826	57268	71433	73601	82374	89914

Table D-39

Butte County
Surface Area = 1639 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	144900	161600	183229	197464	203857	216401	228020	244375	260730
Avg. Daily VMT/1000	2619	3257	4344	4546	4480	5362	5751	6239	7430

Table D-40

Colusa County
Surface Area = 1151 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	12900	14600	16300	17833	18926	21315	22697	24517	26337
Avg. Daily VMT/1000	382	463	564	581	574	737	781	917	1086

Table D-41

Glenn County
Surface Area = 1314 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	21500	22900	24827	26398	26640	28523	29348	30649	31950
Avg. Daily VMT/1000	611	753	845	880	747	920	969	1132	1367

Table D-42

Placer County
Surface Area = 429 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	97917	114940	145031	178912	217796	270671	301005	347102	393198
Avg. Daily VMT/1000	2404	2989	3851	4729	6034	8947	8373	9461	10055

Table D-43 Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento County
Surface Area = 966 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	787900	890700	1046870	1120733	1233557	1379103	1555848	1751264	1946679
Avg. Daily VMT/1000	14730	19621	25096	27114	27090	32513	33091	35567	37370

Table D-44

Shasta County
Surface Area = 3785 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	116600	129100	147966	159742	164672	180984	196464	212193	227922
Avg. Daily VMT/1000	2336	2867	3886	4019	4100	5188	5663	6582	7632

Table D-45

Solano County
Surface Area = 511 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	63807	75977	98287	109170	121903	129541	139838	155125	170411
Avg. Daily VMT/1000	1794	2341	3712	4116	4731	5705	5970	7425	7969

Table D-46

A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sutter County
Surface Area = 603 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	52600	57800	64814	74167	79528	90627	95757	103807	111856
Avg. Daily VMT/1000	995	1253	1684	1845	1921	2443	2922	3534	4196

Table D-47

Tehama County
Surface Area = 2951 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	39100	44000	49866	54573	55933	61378	62442	65383	68323
Avg. Daily VMT/1000	1026	1149	1752	1763	1736	2279	2427	2825	3317

Table D-48

Yolo County
Surface Area = 1013 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	113900	123500	141773	154603	170004	188858	222277	246659	271040
Avg. Daily VMT/1000	2423	3154	3592	4008	4577	5733	5812	6535	7007

Table D-49

Yuba County
Surface Area = 631 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	49800	53100	58581	61895	60409	68618	71506	78161	84816
Avg. Daily VMT/1000	705	881	1145	1225	1278	1606	1842	2157	2485

Table D-50

Salton Sea Air Basin

Surface Area = 6304 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	230077	270397	354144	422147	469910	568471	631366	702883	774399
Avg. Daily VMT/1000	5782	7545	11915	13396	12093	16213	17138	19798	22306

Table D-51

Imperial County
Surface Area = 4174 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	92500	98600	110074	136183	143596	164221	178201	196294	214386
Avg. Daily VMT/1000	2421	2693	3660	3815	4004	5008	5562	6473	7563

Table D-52

Riverside County
Surface Area = 2129 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	137577	171797	244070	285964	326314	404250	453165	506589	560013
Avg. Daily VMT/1000	3361	4852	8255	9581	8089	11205	11576	13325	14743

Table D-53

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin and County

Surface Area = 4200 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1873300	2109300	2504897	2615201	2836158	3057000	3258951	3446262	3633572
Avg. Daily VMT/1000	32722	45636	65250	68235	74567	87944	86948	91223	96987

Table D-54

San Francisco Bay Area Air Basin

Surface Area = 5340 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	5095406	5473956	5874273	6182722	6646802	6904411	7337485	7736635	8135781
Avg. Daily VMT/1000	93109	111964	132558	141224	154959	163790	170505	183332	194476

Table D-55

Alameda County
Surface Area = 738 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1109500	1196000	1276100	1335230	1453053	1503790	1651164	1757655	1864145
Avg. Daily VMT/1000	21249	25726	30002	30270	33456	36218	39569	42329	45448

Table D-56

Contra Costa County
Surface Area = 720 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	658500	710900	806315	872804	956372	1025900	1116298	1221690	1327081
Avg. Daily VMT/1000	12629	15708	19083	20742	22858	25768	26550	28340	29621

Table D-57

Marin County
Surface Area = 520 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	222700	220200	229887	238409	248225	252195	252440	251850	251260
Avg. Daily VMT/1000	3602	4340	5248	5501	5991	6269	6325	6650	7009

Table D-58

Napa County
Surface Area = 754 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	99300	102900	111017	117269	124984	133526	142121	154034	165946
Avg. Daily VMT/1000	2040	2326	2732	3345	3710	4216	4728	5127	5440

Table D-59

San Francisco County
Surface Area = 47 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	680500	727500	723187	739863	780974	794850	816230	818388	820545
Avg. Daily VMT/1000	8785	10521	12084	12237	12775	12942	12789	13500	14235

Table D-60

San Mateo County
Surface Area = 449 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	588100	617300	648162	675919	710732	721350	747134	766937	786740
Avg. Daily VMT/1000	11882	13706	16192	18133	20124	19096	20235	21600	22761

Table D-61

Santa Clara County
Surface Area = 1291 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1300200	1410500	1495296	1573477	1692760	1760741	1844146	1925569	2006992
Avg. Daily VMT/1000	24573	29169	33996	36547	40206	41306	41896	45701	48916

Table D-62

Solano County
Surface Area = 318 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	173393	197323	244177	258531	275304	292553	315809	350331	384853
Avg. Daily VMT/1000	3273	4196	5440	5436	6063	7230	7571	8432	8807

Table D-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

Sonoma County
Surface Area = 504 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	263213	291333	340132	371220	404398	419506	452143	490181	528219
Avg. Daily VMT/1000	5076	6272	7781	9013	9776	10745	10842	11653	12239

Table D-64

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin

Surface Area = 23490 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1979840	2275776	2645311	2972667	3212615	3658320	3959518	4389922	4820322
Avg. Daily VMT/1000	32804	41697	58326	68389	77176	98950	103176	115884	129484

Table D-65

Fresno County
Surface Area = 5963 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	517400	582800	670250	755971	804341	892325	949961	1032308	1114654
Avg. Daily VMT/1000	7738	9910	13251	15763	17464	21547	22756	25481	28198

Table D-66

Kern County
Surface Area = 4355 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	323540	377476	436585	503592	552592	639837	671715	730392	789068
Avg. Daily VMT/1000	6565	8423	11344	12677	14852	19818	19857	22610	25545

Table D-67

A portion of Kern County lies within the Mojave Desert Air Basin.

Kings County
Surface Area = 1391 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	74200	83900	101866	115865	130085	146487	156334	170543	184751
Avg. Daily VMT/1000	1055	1345	1927	2822	3127	4048	4201	4634	5100

Table D-68

Madera County
Surface Area = 2136 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	63900	74800	88506	109941	124545	142837	150278	167122	183966
Avg. Daily VMT/1000	1625	1970	2425	2725	3375	4392	5435	6304	7327

Table D-69

Merced County
Surface Area = 1929 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	135500	157000	179400	199020	211247	244320	277715	319273	360831
Avg. Daily VMT/1000	2892	3440	5386	6043	6652	8683	8915	10231	11582

Table D-70

San Joaquin County
Surface Area = 1399 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	350200	417200	481939	522089	569072	664369	747149	868306	989462
Avg. Daily VMT/1000	5490	7334	10225	12293	13863	18112	18754	20973	23566

Table D-71

Stanislaus County
Surface Area = 1494 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	267700	302000	373650	415341	451030	510858	559051	606446	653841
Avg. Daily VMT/1000	3608	4528	7752	8845	9761	12401	11915	13082	14339

Table D-72

Tulare County
Surface Area = 4824 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	247400	280600	313115	350848	369703	417287	447315	495532	543749
Avg. Daily VMT/1000	3831	4747	6016	7221	8082	9949	11343	12569	13827

Table D-73

South Central Coast Air Basin

Surface Area = 7887 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	988800	1119300	1255854	1319020	1407693	1497799	1578438	1636071	1693703
Avg. Daily VMT/1000	15280	20840	28757	29642	32257	37805	39847	43236	46356

Table D-74

San Luis Obispo County
Surface Area = 3304 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	156600	184200	217808	230223	248107	262593	277437	291356	305274
Avg. Daily VMT/1000	3093	4255	5655	5787	6295	7498	8292	9504	10892

Table D-75

Santa Barbara County
Surface Area = 2737 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	300000	338200	368953	383717	400932	419678	440337	452178	464019
Avg. Daily VMT/1000	5205	6888	9510	9151	9633	10943	12446	13460	14613

Table D-76

Ventura County
Surface Area = 1845 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	532200	596900	669093	705080	758654	815528	860664	892537	924410
Avg. Daily VMT/1000	6982	9697	13592	14704	16329	19364	19109	20272	20851

Table D-77

South Coast Air Basin

Surface Area = 6480 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	10604663	11698030	13083594	13745292	14687872	15996422	16727861	17389313	18050763
Avg. Daily VMT/1000	161397	228818	282561	292884	323009	393767	377734	397696	414267

Table D-78

Los Angeles County
Surface Area = 2538 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	7402796	8030358	8629028	8839010	9277658	9902051	10132531	10337916	10543300
Avg. Daily VMT/1000	112914	156791	182709	181641	193986	229225	211882	219707	225189

Table D-79 A portion of Los Angeles County lies within the Mojave Desert Air Basin.

Orange County
Surface Area = 789 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1944800	2166300	2411976	2604532	2863529	3061094	3260162	3393153	3526144
Avg. Daily VMT/1000	28849	43196	55940	60031	67138	78333	78937	82529	85272

Table D-80

Riverside County
Surface Area = 2024 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	521774	651556	925658	1070642	1206877	1495125	1676041	1873630	2071219
Avg. Daily VMT/1000	8295	12324	21330	25384	32792	47891	49080	54224	58942

Table D-81 Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

San Bernardino County
Surface Area = 1129 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	735293	849816	1116932	1231108	1339808	1538152	1659127	1784614	1910100
Avg. Daily VMT/1000	11339	16507	22582	25828	29093	38318	37835	41236	44864

Table D-82 A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX E

Natural Sources

Appendix E: *Natural Sources*

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Introduction

Appendix E contains estimates of emissions from natural processes occurring in terrestrial, marine, or aquatic ecosystems. Natural source air emissions include a variety of compounds and occur as a result of geologic or meteorological activity (such as petroleum seeps, or wildfires), or living processes by flora and fauna (such as emissions from vegetation foliage, or from soil microbes). Emissions resulting from anthropogenic activities, such as soil ammonia (NH_3) emissions resulting from fertilizer application, burning of agricultural crop residues, prescribed burning of natural areas, wildfires that are managed for resources benefit, and windblown dust from crop fields and pastures are provided in Chapter 2. Windblown dust emissions from dry lake beds have also not been included.

For this edition of the Almanac, categories of natural sources include geogenic (petroleum seeps) and biogenic (vegetation) sources, and wildfires. Other categories may be added in future editions. Natural emissions are strongly affected by seasonal influences on factors such as temperature and moisture conditions, or wind regimes. Emissions during “peak season” are often orders of magnitude greater than emissions during dormant periods. Emissions for some categories (for example see Figure E-1) are therefore reported with respect to time of year, in addition to annual averages. Emissions can fluctuate greatly from year-to-year due to variation in meteorology or land cover/land use. Methods for forecasting future natural emissions due to changes in climate or land cover/land use remain in the realm of on-going scientific research, and have not been applied in this edition of the Almanac.

Statewide

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**2225**	**2482**	**79**	**24**	**253**	**215**	**76**
Biogenic Sources*	2067	0	0	0	0	0	15
Geogenic Sources*	29	0	0	0	0	0	36
Wildfires**	128	2482	79	24	253	215	25

* Biogenic and geogenic emissions are not year-specific.
** Wildfire emissions reflect 10-year averages.
Table E-1

Biogenic Sources

Biogenic volatile organic compounds (BVOCs) are emitted into the atmosphere from terrestrial ecosystems such as vegetation. BVOCs include isoprene, monoterpenes, methylbutenol (MBO), and other biogenic VOCs (OVOCs). These compounds are of interest because of their roles in atmospheric chemistry and climate. In the presence of anthropogenic NO_x compounds, isoprene has been found to play a significant role in ozone chemistry. Monoterpenes and MBO are moderately reactive. OVOCs are a general category comprised of less reactive compounds, such as methanol and acetone. Isoprene, monoterpenes, MBO, and a fraction of the OVOCs are considered as reactive organic gas (ROG).

Plant BVOC emissions vary by compound and by orders of magnitude among various plant species. BVOCs play roles in plant physiology and chemical defense from pests and plant diseases. BVOC emissions are strongly influenced by environmental factors such as temperature and sunlight. Biophysical and environmental mechanisms controlling the synthesis and emission of isoprene, monoterpenes, and MBO have been studied across a variety of plant species and landscapes. Less is known about OVOCs. As a result, the BVOC research community has developed BVOC emission models, which have been routinely applied by the climate research, air quality, and emissions modeling community. A statewide model was developed to estimate BVOC emissions from vegetation over the course of a calendar year. The model runs at a 4 km x 4 km spatial resolution and generates hourly emissions of isoprene, monoterpenes, MBO, and OVOCs. Emissions from vegetation were estimated from plant species leaf mass and emission factors, and environmental adjustment algorithms representing light and temperature dependence of BVOC emissions. Leaf mass density estimates, used to scale emissions from leaf to landscapes, were based on Geographic Information System (GIS) land use/land cover databases, species leaf weight factors, and monthly satellite leaf area index

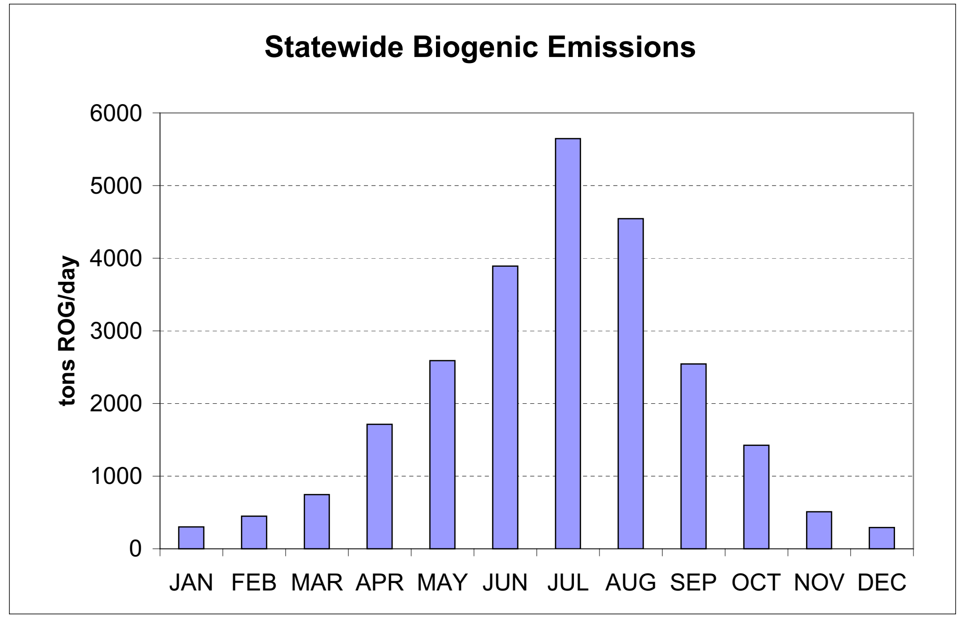

Figure E-1

(LAI) data. Temporal and spatial variation in the model was driven by monthly estimates of leaf mass densities and hourly light and temperature. The annual statewide emission of BVOC (reported here as ROG) is estimated to be over 750,000 tons, composed of 37 percent isoprene, 30 percent MBO, 24 percent monoterpenes, and nine percent OVOC. As shown in Figure E-1, the majority of biogenic emissions are produced during the ozone season (May through October).

Geogenic Sources

Petroleum gas and oil seeps occur naturally in California and have been active for millennia. Oil and gas seeps form where oil or natural gas emerge from subsurface sources to the ground or water surface. Seeps are associated with water springs in which oil floats to the surface of the water, and gas bubbles out into the atmosphere. Large seeps may be comprised of nearly pure oil, asphaltum, or semisolid bitumen. Most seeps are mixed with varying amounts of sand, clay, and biomass debris. Terrestrial seep flows vary with the seasons, with elevated flows occurring during warm weather. Seismic activity can create new seeps or cause increased flows from existing seeps. Major marine seeps are located off the coast of Santa Barbara County. Other seeps occur in regions of oil and gas production throughout the state.

Wildfires

A wildfire is a natural event that burns a variety of vegetation types ranging in age, size, and density. This wildfire category does not include prescribed fires such as agriculture burning, forest management fires, or Wildland Fire Use (WFU). A prescribed burn is a fire ignited by a planned management action whereas a WFU is a naturally ignited lightning fire that is managed for resources benefit.

Wildfires can vary significantly from year to year; an area may have extreme wildfire behavior one year and none the following year. Emissions for PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, NO_2, NH_3, CH_4, and ROG (Total Non-Methane Hydrocarbon, reported here as ROG) are estimated by air basin and county. About 97 percent of wildfires occur between May and October, with August as the highest month. The wildfire emission estimates presented in this Almanac are based on a 10-year average that was calculated from actual 1994-2003 wildfire activity. Figure E-2 is a map showing all of the wildfires that burned between 1994 and 2003 in California. The tables that follow show the 10-year average emissions per air basin and county.

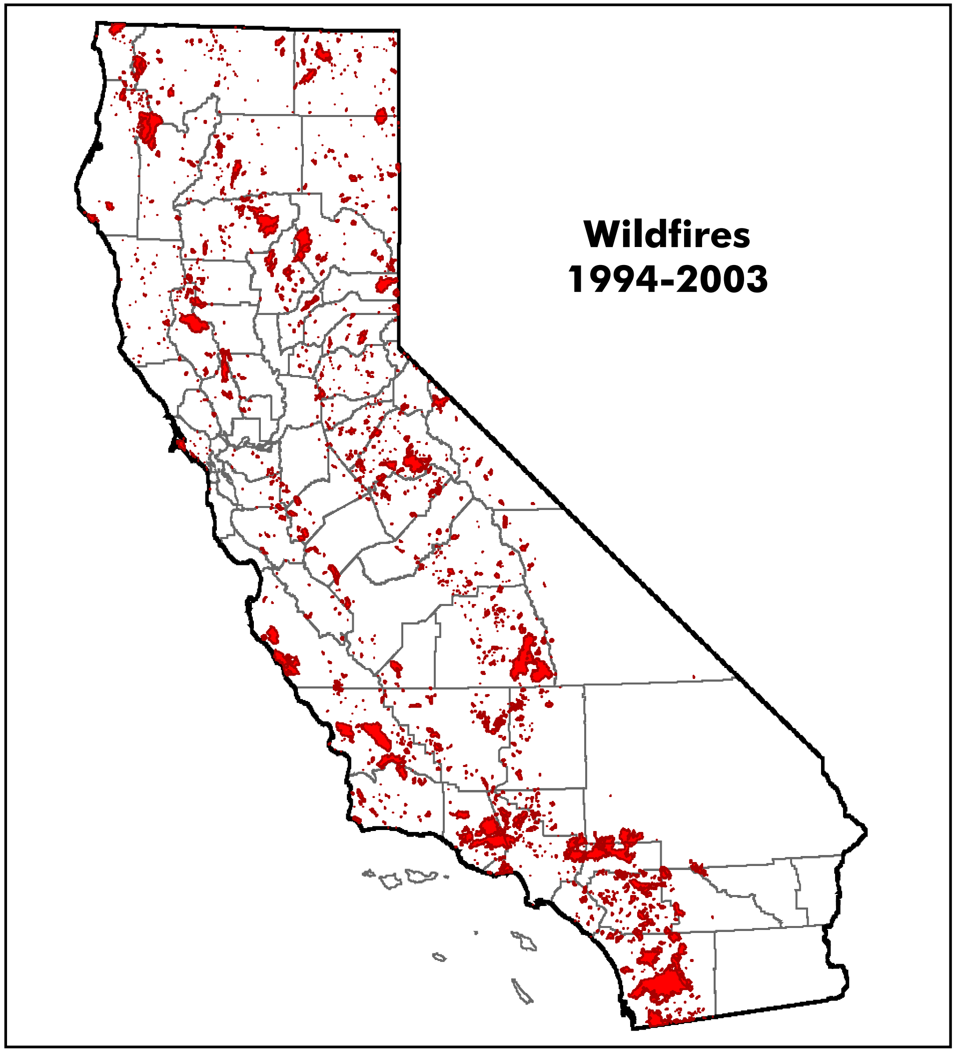

Figure E-2

Great Basin Valleys Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**37**	**8**	**0**	**0**	**1**	**1**	**3**
Biogenic Sources	36	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	8	0	0	1	1	0

Table E-2

Alpine County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**9**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	9	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-3

Inyo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**2**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	7	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	2	0	0	0	0	0

Table E-4

Mono County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**21**	**6**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	21	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-5

Lake County Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**64**	**124**	**4**	**1**	**13**	**11**	**2**
Biogenic Sources	55	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	9	124	4	1	13	11	1

Table E-6

Lake Tahoe Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-7

El Dorado County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**2**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	2	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-8 A portion of El Dorado County lies within the Mountain Counties Air Basin.

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	1	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-9 Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**39**	**95**	**3**	**1**	**10**	**8**	**5**
Biogenic Sources	36	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	4	95	3	1	10	8	1

Table E-10

Kern County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**25**	**41**	**1**	**0**	**4**	**4**	**1**
Biogenic Sources	23	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	41	1	0	4	4	0

Table E-11 A portion of Kern County lies within the Mojave Desert Air Basin.

Los Angeles County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**6**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	6	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-12 A portion of Los Angeles County lies within the South Coast Air Basin.

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**0**	**2**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	0	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	2	0	0	0	0	0

Table E-13 Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

San Bernardino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**52**	**1**	**0**	**5**	**4**	**3**
Biogenic Sources	6	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	1	52	1	0	5	4	1

Table E-14 A portion of San Bernardino County lies within the Mojave Desert Air Basin.

Mountain Counties Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**330**	**396**	**12**	**4**	**40**	**34**	**6**
Biogenic Sources	305	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	25	396	12	4	40	34	4

Table E-15

Amador County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**15**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-16

Calaveras County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**39**	**15**	**0**	**0**	**2**	**1**	**0**
Biogenic Sources	38	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	15	0	0	2	1	0

Table E-17

El Dorado County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**50**	**5**	**0**	**0**	**1**	**0**	**0**
Biogenic Sources	49	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	5	0	0	1	0	0

Table E-18

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mariposa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**15**	**0**	**0**	**2**	**1**	**0**
Biogenic Sources	35	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	15	0	0	2	1	0

Table E-19

Nevada County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**7**	**0**	**0**	**1**	**1**	**0**
Biogenic Sources	36	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	7	0	0	1	1	0

Table E-20

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**28**	**34**	**1**	**0**	**3**	**3**	**0**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	34	1	0	3	3	0

Table E-21

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Plumas County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**51**	**161**	**5**	**1**	**16**	**14**	**2**
Biogenic Sources	43	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	8	161	5	1	16	14	2

Table E-22

Sierra County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**20**	**38**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	38	1	0	4	3	0

Table E-23

Tuolumne County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**54**	**120**	**4**	**1**	**12**	**10**	**2**
Biogenic Sources	46	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	8	120	4	1	12	10	1

Table E-24

North Central Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**73**	**44**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	72	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	44	1	0	5	4	0

Table E-25

Monterey County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**51**	**41**	**1**	**0**	**4**	**4**	**2**
Biogenic Sources	50	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	41	1	0	4	4	0

Table E-26

San Benito County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**17**	**3**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	3	0	0	0	0	0

Table E-27

Santa Cruz County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**5**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	5	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-28

North Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**373**	**393**	**14**	**4**	**41**	**35**	**6**
Biogenic Sources	363	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	9	393	14	4	41	35	4

Table E-29

Del Norte County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**27**	**39**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	24	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	39	1	0	4	3	0

Table E-30

Humboldt County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**86**	**149**	**5**	**2**	**16**	**13**	**2**
Biogenic Sources	81	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	5	149	5	2	16	13	1

Table E-31

Mendocino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**118**	**6**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	117	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-32

Sonoma County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**23**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	23	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Trinity County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**119**	**198**	**7**	**2**	**21**	**17**	**3**
Biogenic Sources	118	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	198	7	2	21	17	2

Table E-34

Northeast Plateau Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**283**	**212**	**7**	**2**	**22**	**19**	**6**
Biogenic Sources	269	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	14	212	7	2	22	19	2

Table E-35

Lassen County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**59**	**47**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	56	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	3	47	1	0	5	4	0

Table E-36

Modoc County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**57**	**52**	**2**	**1**	**5**	**5**	**2**
Biogenic Sources	54	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	3	52	2	1	5	5	1

Table E-37

Siskiyou County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**166**	**113**	**4**	**1**	**12**	**10**	**2**
Biogenic Sources	159	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	8	113	4	1	12	10	1

Table E-38

Sacramento Valley Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**379**	**379**	**12**	**4**	**39**	**33**	**8**
Biogenic Sources	367	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	12	379	12	4	39	33	4

Table E-39

Butte County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**44**	**89**	**3**	**1**	**9**	**8**	**1**
Biogenic Sources	41	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	89	3	1	9	8	1

Table E-40

Colusa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**23**	**15**	**1**	**0**	**2**	**1**	**1**
Biogenic Sources	22	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	15	1	0	2	1	0

Table E-41

Glenn County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**37**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	37	1	0	4	3	0

Table E-42

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-43 Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**10**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-44

Shasta County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**167**	**49**	**2**	**1**	**5**	**4**	**1**
Biogenic Sources	166	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	49	2	1	5	4	0

Table E-45

Solano County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**4**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	4	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-46 A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sutter County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-47

Tehama County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**71**	**170**	**5**	**2**	**17**	**15**	**2**
Biogenic Sources	66	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	4	170	5	2	17	15	2

Table E-48

Sacramento Valley Air Basin (continued)

Natural Source Emissions (tons/day, annual average)

Yolo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**16**	**17**	**1**	**0**	**2**	**2**	**1**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	17	1	0	2	2	0

Table E-49

Yuba County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**15**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-50

Salton Sea Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**12**	**0**	**0**	**1**	**1**	**5**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	1	12	0	0	1	1	0

Table E-51

Imperial County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**4**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	0	0	0	0	0	0	0

Table E-52

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**12**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	12	0	0	1	1	0

Table E-53 Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin and County

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**76**	**138**	**4**	**1**	**14**	**12**	**2**
Biogenic Sources	67	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	9	138	4	1	14	12	1

Table E-54

San Francisco Bay Area Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**106**	**49**	**2**	**1**	**5**	**4**	**1**
Biogenic Sources	105	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	49	2	1	5	4	1

Table E-55

Alameda County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**2**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	11	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	2	0	0	0	0	0

Table E-56

Contra Costa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	11	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-57

Marin County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**4**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	4	0	0	0	0	0

Table E-58

Napa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**27**	**37**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	37	1	0	4	3	0

Table E-59

San Francisco County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	1	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-60

San Mateo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-61

Santa Clara County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**29**	**6**	**0**	**0**	**1**	**1**	**0**
Biogenic Sources	29	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-62

Solano County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

Sonoma County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**10**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-64

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**235**	**348**	**11**	**3**	**35**	**30**	**19**
Biogenic Sources	211	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	14
Wildfires	24	348	11	3	35	30	3

Table E-65

Fresno County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**64**	**15**	**0**	**0**	**1**	**1**	**3**
Biogenic Sources	63	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	1	15	0	0	1	1	0

Table E-66

Kern County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**17**	**1**	**0**	**2**	**1**	**4**
Biogenic Sources	18	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	1	17	1	0	2	1	0

Table E-67

A portion of Kern County lies within the Mojave Desert Air Basin.

Kings County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**4**	**1**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	4	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	0	1	0	0	0	0	0

Table E-68

Madera County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**38**	**3**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	38	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	3	0	0	0	0	0

Table E-69

Merced County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**6**	**1**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	6	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	0	1	0	0	0	0	0

Table E-70

San Joaquin County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**0**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	8	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	0	0	0	0	0	0

Table E-71

Stanislaus County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**13**	**16**	**1**	**0**	**2**	**1**	**1**
Biogenic Sources	12	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	16	1	0	2	1	0

Table E-72

Tulare County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**82**	**296**	**9**	**3**	**30**	**25**	**5**
Biogenic Sources	61	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	21	296	9	3	30	25	3

Table E-73

South Central Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**123**	**120**	**4**	**1**	**12**	**10**	**5**
Biogenic Sources	93	0	0	0	0	0	0
Geogenic Sources	23	0	0	0	0	0	4
Wildfires	8	120	4	1	12	10	1

Table E-74

San Luis Obispo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**62**	**2**	**1**	**6**	**5**	**3**
Biogenic Sources	32	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	4	62	2	1	6	5	1

Table E-75

Santa Barbara County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**54**	**12**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	35	0	0	0	0	0	0
Geogenic Sources	19	0	0	0	0	0	1
Wildfires	0	12	0	0	1	1	0

Table E-76

Ventura County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**33**	**46**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	4	0	0	0	0	0	1
Wildfires	3	46	1	0	5	4	0

Table E-77

South Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**86**	**164**	**5**	**2**	**17**	**14**	**6**
Biogenic Sources	76	0	0	0	0	0	3
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	11	164	5	2	17	14	2

Table E-78

Los Angeles County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**34**	**65**	**2**	**1**	**7**	**6**	**2**
Biogenic Sources	30	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	4	65	2	1	7	6	1

Table E-79 A portion of Los Angeles County lies within the Mojave Desert Air Basin.

Orange County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**9**	**2**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	9	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	2	0	0	0	0	0

Table E-80

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**24**	**38**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	22	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	38	1	0	4	3	0

Table E-81 Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

San Bernardino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**59**	**2**	**1**	**6**	**5**	**3**
Biogenic Sources	15	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	4	59	2	1	6	5	1

Table E-82 A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX F

Lists of Figures and Tables

for Chapters 1 through 5

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Glossary of Air Quality Terms

Air: So-called "pure" air is a mixture of gases containing about 78 percent nitrogen; 21 percent oxygen; less than one percent of carbon dioxide, argon, and other gases; and varying amounts of water vapor.

Air Basin: A land area with generally similar meteorological and geographic conditions throughout. To the extent possible, air basin boundaries are defined along political boundary lines and include both the source and receptor areas. California is currently divided into 15 air basins.

Air District: A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts.

Air Monitoring: Sampling for and measuring of pollutants present in the atmosphere.

Air Pollution: Degradation of air quality resulting from unwanted chemicals or other materials occurring in the air.

Air Pollution Control District (APCD): An agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors.

Air Quality Management District (AQMD): A group of counties or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region.

Air Quality Management Plan (AQMP): A plan prepared by an APCD / AQMD, for a county or region designated as a nonattainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. AQMPs are incorporated into the State Implementation Plan (SIP).

Air Quality Standard (AQS): The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and / or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

Ambient Air Quality Standards (California-CAAQS or National-NAAQS): Health- and welfare-based standards for outdoor air which identify the maximum acceptable average concentrations of air pollutants during a specified period of time.

Area-wide Sources (also known as "Area Sources"): Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and woodstoves) that are typically associated with homes and non-industrial sources. Area-wide sources do not include mobile sources. The California Clean Air Act requires air districts to include area-wide sources in the development and implementation of their Air Quality Maintenance Plan. Under the federal air toxics program, an area-wide source is defined as any source that emits less than 10 tons per year of a single hazardous air pollutant (HAP) or 25 tons per year of all HAPs.

Attainment Area: A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards. An area may be an attainment area for one pollutant and a nonattainment area for others.

California Clean Air Act (CCAA): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local air districts in violation of the CAAQS must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date.

Criteria Air Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, and $PM_{2.5}$.

Climate Change: A change in the temperature of the earth's troposphere. Climate change has occurred in the past as a result of natural influences, but the term is most often used in reference to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases.

Design Value (DV): The concentration that is compared to the standard for the purpose of determining attainment status.

Emission Inventory: An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.

Emission Standard: The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack.

Environmental Justice: The fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies.

Expected Peak Day Concentration (EPDC): See Peak Indicator

Exceedance: A measured level of an air pollutant higher than the national or state ambient air quality standards.

Exposure: The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

Exposure Assessment: Measurement or estimation of the magnitude, frequency, duration and route of exposure to a substance for the populations of interest.

Federal Clean Air Act (FCAA): A federal law passed in 1970 and amended in 1974, 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, mobile and stationary control measures, air toxics standards, acid rain control measures, and enforcement provisions.

Hydrocarbon: A general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive.

Mean: Average.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes (compare with Stationary Sources).

Nonattainment Area: A geographic area that does not meet either a State or federal standard for a given pollutant. This area usually consists of an air basin or county, but can be any geographic area defined by the U.S. EPA.

Nonattainment Transitional: A subcategory of the nonattainment designation category for State standards that signals progress and implies the area is nearing attainment.

Peak Indicator: Using a statistical process, it is a site-specific and pollutant-specific value that represents the concentration expected to be exceeded once per year, on average, based on the distribution of data for the monitoring site. The calculation procedure uses data collected at the monitoring site for a three-year period. For example, the 2004 peak indicator is calculated using data for the years 2002, 2003, and 2004. The site with the highest peak indicator for a region is used for the long-term trends in the almanac. It is also referred to as the California Design Value or the Expected Peak Day Concentration.

Precursor Emissions: Emissions which form pollutants in the atmosphere due to the reaction of themselves with each other or with sunlight. Ozone is formed in the atmosphere when hydrocarbon and NO_x react in the presence of sunlight. Particulate Matter (PM) is a complex pollutant that can be formed from the reaction of gaseous precursors such as NO_x, ROG, SO_x, and ammonia.

Reactive Organic Gas (ROG): A reactive chemical gas, composed of non-methane hydrocarbons that may contribute to the formation of smog. Also sometimes referred to as non-methane organic gases (NMOGs).

Risk Assessment: An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

State Implementation Plan (SIP): A plan prepared by states and submitted to U.S. EPA describing how each area will attain and maintain national ambient air quality standards. SIPs include the technical foundation for understanding the air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and modeling analyses.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants (compare with Mobile Sources).

Total Organic Gases (TOG): All gases consisting of substances containing carbon, except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

Toxic Air Contaminant (TAC): An air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code section 39650, et seq.) than pollutants subject to CAAQSs. Health effects from TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Vehicle Miles Traveled (VMT): The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly, or yearly) or over a specified road or transportation corridor.

Volatile Organic Compounds (VOC): A group of chemicals that react in the ambient air with nitrogen oxides in the presence of heat and sunlight to form ozone. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane or other compounds determined by U.S. EPA to have negligible photochemical reactivity.